e-Front runners

FUJI SERVO SYSTEM

FALDIC ALPHA5

SIMPLE & SMART

MEH555a

ALPHA5

Line of products of ALPHA5 Series

Servo Amplifier

Model	Command interface			Control mode			Input power supply	Capacity	Type	Applicable motor series
	Pulse	Analog	SX bus	Position	Speed	Torque				
VV type General-purpose interface (pulse, analog voltage)	●	●		●	●	●	Single-phase or 3-phase 200 to 240 VAC	0.05 to 0.75kW	RYT***□5-VV2	GYS GYC GYG
							3-phase 200 to 240 VAC	0.85 to 1.5kW		
VS type High speed serial bus (SX bus compatible)			●	●	●	●	Single-phase or 3-phase 200 to 240 VAC	0.05 to 0.75kW	RYT***□5-VS2	GYS GYC GYG
							3-phase 200 to 240 VAC	0.85 to 1.5kW		
LS type High speed serial bus (Built-in linear positioning function, SX bus compatible)			●	●	●		Single-phase or 3-phase 200 to 240 VAC	0.05 to 0.75kW	RYT***□5-LS2	GYS GYC GYG
							3-phase 200 to 240 VAC	0.85 to 1.5kW		

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Servomotor

Model	Rated speed (max. speed)	Rated output capacity	Servomotor type		Protective constructon	Encoder	Type
			Without brake	With brake			
GYS motor Ultra-low inertia	3000r/min (0.75kW or less: 6000r/min)	5 types 0.05, 0.1, 0.2, 0.4, 0.75kW	●	●	IP67 *1	18-bit ABS/INC	GYS***D5-HB2 (-B) *2
						20-bit INC	GYS***D5-RB2 (-B) *2
GYC motor Low inertia	3000r/min (0.75kW or less: 6000r/min 1.0kW or more: 5000r/min	6 types 0.1, 0.2, 0.4, 0.75, 1.0, 1.5kW	●	●	IP67 *1	18-bit ABS/INC	GYC***D5-HB2 (-B) *2
						20-bit INC	GYC***D5-RB2 (-B) *2
GYG motor Middle inertia	2000r/min (3000r/min)	3 types 0.5, 0.75, 1.0kW	●	●	IP67 *1	18-bit ABS/INC	GYG***C5-HB2(-B) *2
						20-bit INC	GYG***C5-RB2(-B) *2
GYG motor Middle inertia	1500r/min (3000r/min)	2 types 0.5, 0.85kW	●	●	IP67 *1	18-bit ABS/INC	GYG***B5-HB2(-B) *2
						20-bit INC	GYG***B5-RB2(-B) *2

*1: Except for shaft-through part and connectors
*2: Models with a brake has "-B" at the end.

Next generation servo system for ever-evolving machines

Fast and accurate positioning is realized.

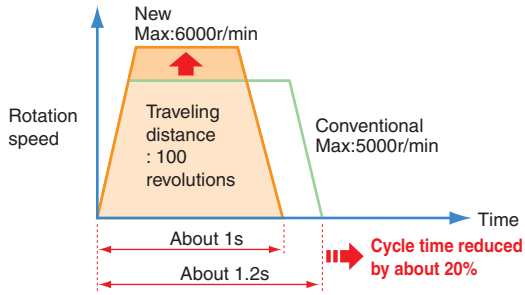
New high speed servo control engine
Frequency response 1500Hz

Increased motor rotation speed
Max. rotation speed 6000r/min

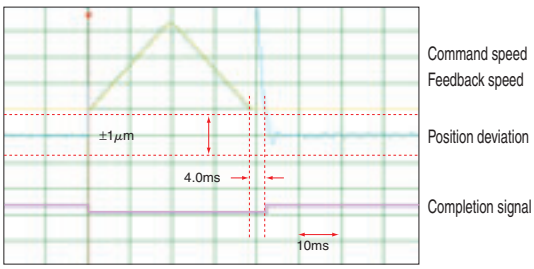
Fine resolution encoder
18-bit absolute/incremental 262,144 pulses
20-bit incremental 1,048,576 pulses

High performance frequency response (1500Hz), high rotation speed (6000r/min) and high resolution encoder reduce the cycle time and make faster and more accurate positioning and settling possible.

■Cycle time reduction 1.2s▶1s



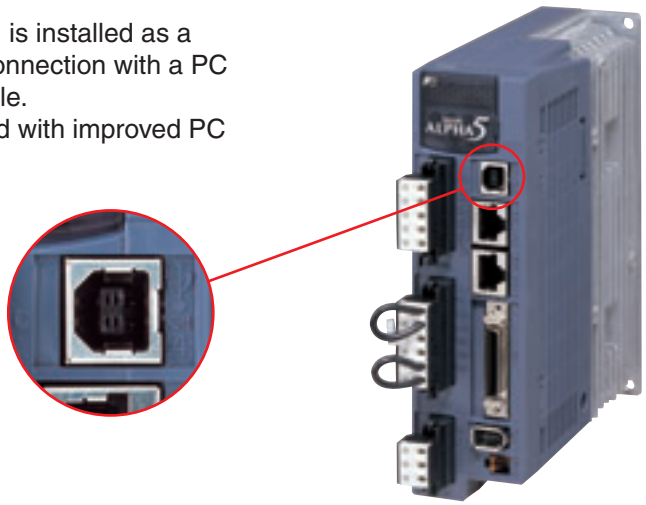
■Time necessary to settling to 1μm accuracy 4ms



1/10000 rotation accuracy with a 10mm ball screw = 1μm

USB compatible

A USB connector (B type) is installed as a standard equipment for connection with a PC over a marketed USB cable.
Enjoys high transfer speed with improved PC Loader operation.



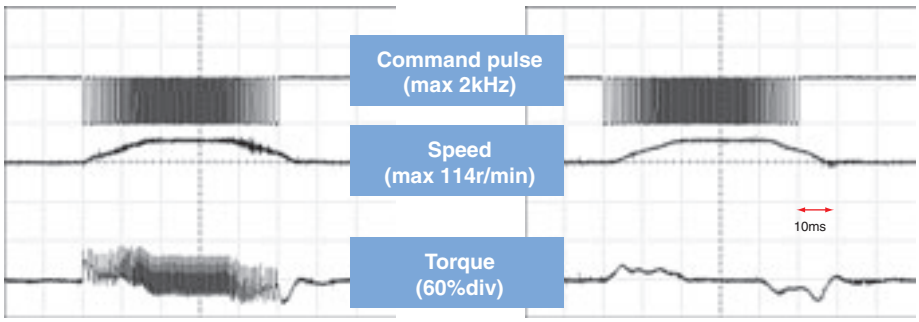
New control functions

Improved auto tuning accuracy

The accuracy of real time auto tuning is improved.
In addition to the increased speed of identification calculation of load inertia of the new high speed servo controlled engine, auto tuning is combined with the pulse smoothing function, new notch filter (auto notch filter) and new vibration suppressing control function to be applicable to a wide range of applications ranging from less rigid belt drive mechanism with coarse command pulses to rigid ball screw drive mechanism with fine command pulses.

Pulse smoothing function

Smooth and high speed positioning can be made even if the frequency of the command pulse is low.
This function is effective for low command pulse frequencies sent by the host controller and replacement with a stepping motor.

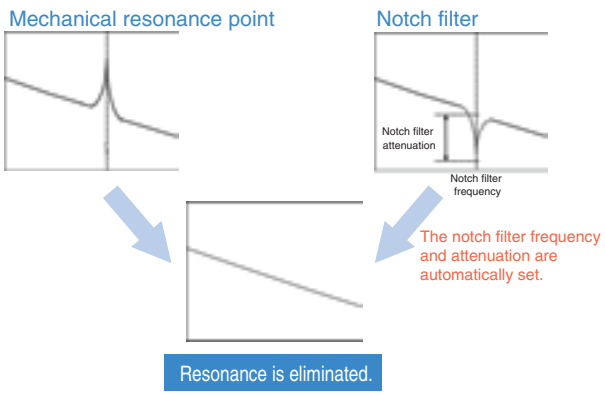


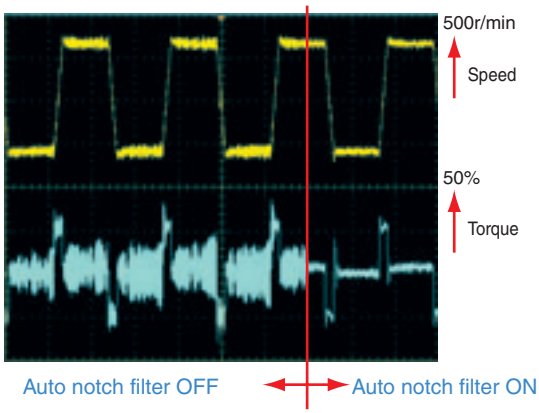
Without pulse smoothing function

With pulse smoothing function

New notch filter (auto notch filter)

The notch filter is set automatically upon detection of mechanical resonance.
Because detection and calculation are always conducted while the auto notch filter remains turned on, resonance frequencies changing by time are effectively filtered.





New vibration suppressing control function

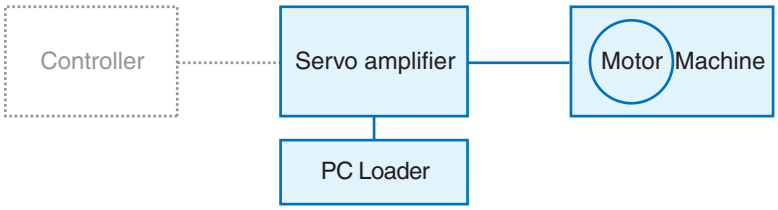
An online learning function is provided for our original vibration suppressing control function.
The anti resonance frequency is learned during online operation even if the servo analyze function of the PC Loader is not used.
Even if there are multiple conditions such as the load weight and arm length, the anti resonance frequency matching each condition can be set through execution of the online learning function for each condition.

Improved usability: PC Loader

Simple setup

· Easy tuning and profile operation

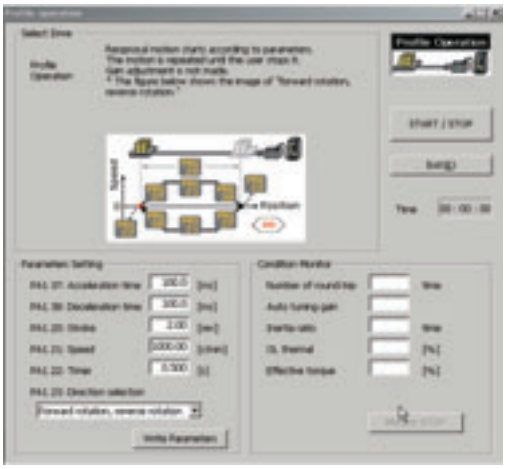
Because the servo can be adjusted for the machine even if the controller program is not completed, the machine setup time is substantially reduced.



Easy tuning data entry screen

Up to 25 reciprocal motions of the servomotor are conducted while the gain is automatically adjusted.

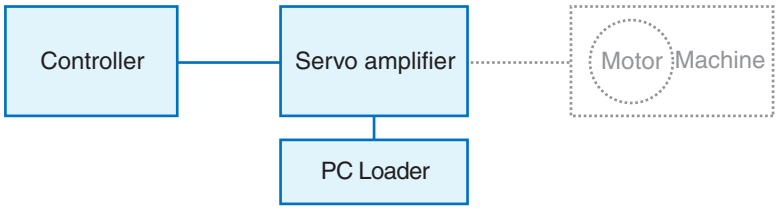
Profile operation data entry screen



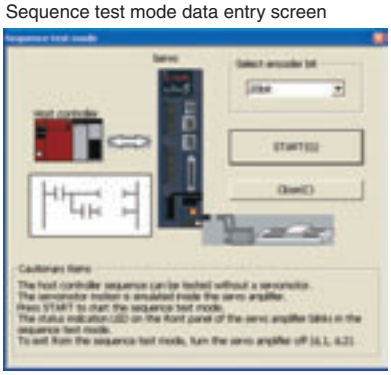
The motion check and load factor check are performed in the initial stage.

· Sequence test mode

The controller program can run even if the machine is not completed.
The efficiency of program debugging is improved.



Sequence test mode data entry screen



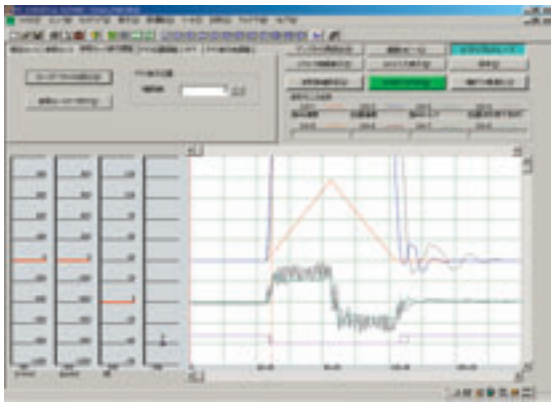
The sequence of the host controller can be tested even if the servomotor is not connected.

Improved monitor functions

· Comparison view

A past waveform having been saved and the current waveform can be displayed simultaneously.

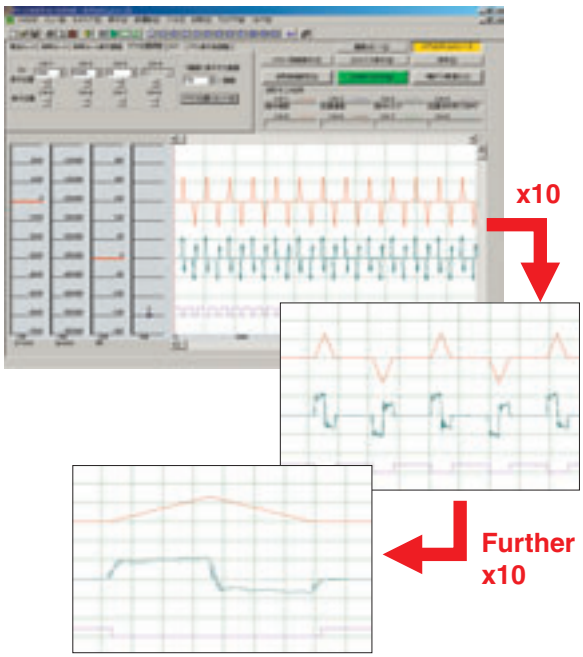
Example of historical trace comparison view screen



· x100 zoom

The waveform can be enlarged up to 100 times.
While checking the overall waveform, you can check the detail waveform.

Example of real time trace x100 zoom screen



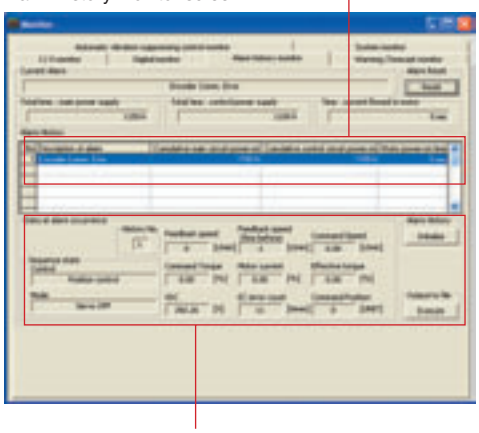
Enriched maintenance functions

· Functions associated with alarm

When an alarm occurs, data such as the speed and torque at alarm occurrence is displayed as well as the description of the alarm. Accurate analyses into the cause of the alarm are possible.

Description of the alarm and various cumulative operation times are displayed.

Alarm history monitor screen



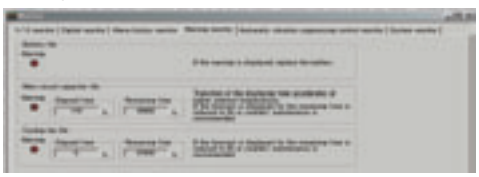
Each piece of data at alarm occurrence is displayed.

· Life warning function

The life of consumable parts of the servo amplifier is calculated.

- Battery life warning
- Main circuit capacity life warning
- Cooling fan life warning

Warning monitor screen



The warning can be issued in a sequence output signal or displayed on the keypad.

Improved usability: Keypad

The keypad of the servo amplifier provides you with functions similar to those enabled with PC Loader. The number of keypad digits is increased to six, improving the ease of operation.

1 MODE/ESC

Mode switch
· The mode is switched (MODE).
· The mode is deselected (ESC).

2 ∧

Sub-mode selection (UP)
· Increment (+1) of value

3 ∨

Sub-mode selection (DOWN)
· Decrement (-1) of value

4 SET/SHIFT

Settlement of mode and value
· The mode and value are settled (SET).
· The cursor digit shifts to the right (SHIFT).

Reduced space

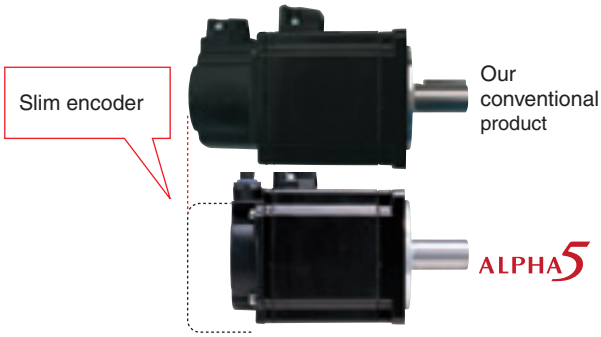
Size reduction of servomotor and servo amplifier

· Servo amplifier

The installation area is reduced by 25 to 30% when compared with our conventional model.

· Servomotor

The overall length is reduced by about 15% when compared with our conventional model.



(Comparison with 0.2kW GYS motor)

Close installation

The servo amplifier can be installed side by side without a clearance. The installation space in the control panel of the machine is reduced.

* 80% ED rating in case of close installation
There is no limitation if 5mm or a larger clearance is placed.

Close installation can be made even if the ABS backup battery is installed.
The battery can be replaced without difficulty while the servo amplifier is left installed.

The designed life time of the battery is about 35000 hours. (Retention time with power turned off)

Long life design

The designed service lives of various parts of the servo amplifier are extended.

Electrolytic capacitor: 10 years
Cooling fan: 10 years

* Operating conditions
· Ambient temperature: Average 30°C/year
· Load factor: Within 80%
· Operation ratio: Within 20 hours/day

Compliance with various standards

Compliance with CE marking and UL/cUL

The standard model complies with CE marking and UL/cUL.

CE c UL us LISTED

Compliance with RoHS directive

The standard model complies with EU's specific hazardous material limitation (RoHS) directive. The servo system is environmentally friendly because use of six hazardous materials is limited.

<Six hazardous materials>
Lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), polybrominated diphenylether (PBDE)

Environmental resistance

IP67 (servomotor)

The standard servomotor model is compatible with IP67* and it can be used in the environment susceptible to water or dust splashes.

* Except for shaft-through part and connectors

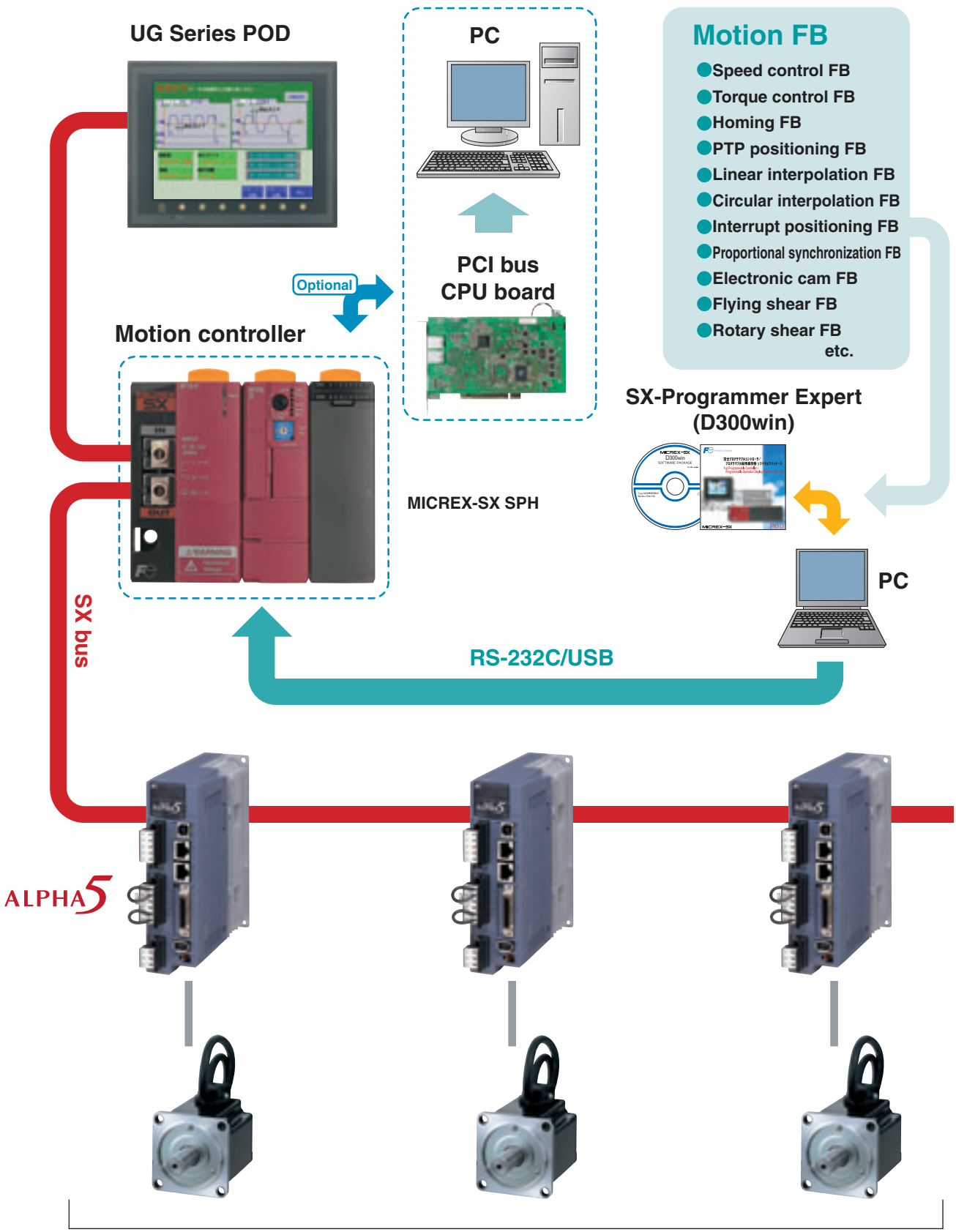
Compatibility

Compatibility with FALDIC-α, -β and -W motors

Because compatibility with FALDIC-α, -β and -W Series servomotors is assured, the new amplifier meets requirements for replacement of existing products flexibly. (Compatibility with individual products is planned.)

Compatibility with high speed serial bus (SX bus)

A motion control system can be established easily through connection with an SX bus. (VS type, LS type)



Total extension 25m (standard), max. 10 connection units (standard)

Explanation of Model Codes

Servo amplifier

RYT 500 D 5 – V S 2

Code	[Basic type]
RYT	ALPHA5 series

Code	[Applicable motor output]
500	50×10^{0}=0.05kW
101	10×10^{1}=0.1kW
201	20×10^{1}=0.2kW
401	40×10^{1}=0.4kW
501	50×10^{1}=0.5kW
751	75×10^{1}=0.75kW
851	85×10^{1}=0.85kW
102	10×10^{2}=1.0kW
152	15×10^{2}=1.5kW

Code	[Series]
D	3000r/min series
C	2000r/min series
B	1500r/min series

Code	[Order of development]
5	5

Code	[Input voltage]
2	AC 200V series

Code	[Upper interface]
S	SX bus
V	General-purpose interface (pulse, analog voltage)

Code	[Major functions]
V	Position, speed and torque control
L	Built-in positioning function

Servomotor

GYS 500 D 5 – H B 2 – B

Code	[Basic type]
GYS	Slim type
GYC	Cubic type
GYG	Middle inertia type

Code	[Rated output]
500	50×10^{0}=0.05kW
101	10×10^{1}=0.1kW
201	20×10^{1}=0.2kW
401	40×10^{1}=0.4kW
501	50×10^{1}=0.5kW
751	75×10^{1}=0.75kW
851	85×10^{1}=0.85kW
102	10×10^{2}=1.0kW
152	15×10^{2}=1.5kW

Code	[Rated speed]
D	3000r/min series
C	2000r/min series
B	1500r/min series

Code	[Order of development]
5	5

Code	[Brake]
Blank	Not provided
B	Provided

Code	[Input voltage]
2	AC 200V series

Code	[Oil seal/shaft]	Applicable motor GYS, GYC, GYG
A	Without an oil seal, straight shaft with a key	△
B	Without an oil seal, straight shaft without a key	◎
C	Without an oil seal, straight shaft with a key, tapped	△
E	With an oil seal, straight shaft with a key	△
F	With an oil seal, straight shaft without a key	△
G	With an oil seal, straight shaft with a key, tapped	△

◎ : Standard item △ : Made-to-order item

Code	[Encoder]
H	18-bit ABS/INC
R	20-bit INC

Specifications of Servo Amplifier

Common specifications

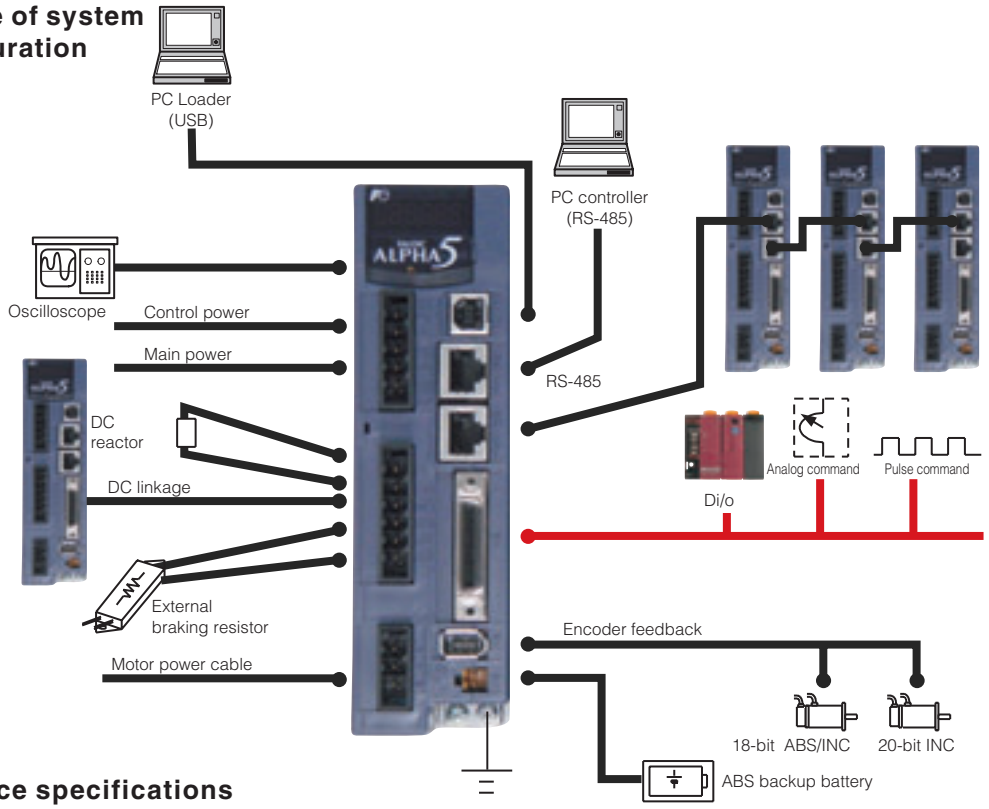
Applicable motor rated speed			3000r/min							2000r/min			1500r/min	
Applicable motor output		[kW]	0.05	0.1	0.2	0.4	0.75	1.0	1.5	0.5	0.75	1.0	0.5	0.85
Amplifier type RYT□□□	**D5-△△2**		500	101	201	401	751	102	152					
	C5-△△2									501	751	102		
	B5-△△2												501	851
Outer frame number			Frame 1			Frame 2	Frame 3	Frame 4		Frame 3		Frame 4	Frame 3	Frame 4
Mass		[kg]	0.7			0.9	1.3	1.5		1.3		1.5	1.3	1.5
Protective construction / cooling			Open / self-cooling				Open / forced air cooling			Open / forced air cooling			Open / forced air cooling	
Power supply	**Main power supply**	**Phase**	Single-phase, 3-phase					3-phase		Single-phase, 3-phase		3-phase	Single-phas, 3-phase	3-phase
		Voltage frequency	AC200 to 240V 50/60Hz											
		Allowable voltage fluctuation	3-phase: AC170 to 262V, Single-phase: AC190 to 262V											
	Control power supply	**Phase**	Single-phase											
		Voltage frequency	AC200 to 240V 50/60Hz											
		Allowable voltage fluctuation	AC170 to 262V											
Control system			IGBT PWM sinusoidal PWM drive											
Max voltage for regenerative resistance [W]	**Built-in resistor**		-	-	-	8	20	20	20	20	20	20	20	20
	External resistor *1		17	17	17	17	50	50	50	50	50	50	50	50
Dynamic brake			Built-in *2											
Feedback			18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)											
Overload capability			300% / 3 sec.											
Speed fluctuation ratio	**Load fluctuation**		Within ±1 r/min (load fluctuation 0 to 100%)											
	Power supply fluctuation		Within ±1 r/min (power supply fluctuation -10 to +10%)											
	Temperature fluctuation		Within ±0.2% (25 ±10°C at rated rotation speed and analog input operation)											
Capability and function	**V type**	**Speed control function**	Closed loop control with speed adjuster, acceleration/deceleration time setting, manual feed rate/max. rotation speed, speed command zero clamp, etc.											
		Positon control function	Closed loop control with position adjuster, electronic gear and output pulse setting, feed forward, homing, interrupt positioning, etc.											
		Torque control function	Closed loop control with current adjuster (proportional open loop control of current and torque), torque limit, speed limit at torque control, etc.											
		Accessory functions	Easy tuning, profile operation, sequence test mode, auto tuning, auto notch filter, vibration suppressing online learning, etc.											
	L type	**Positon control function**	Automatic startup, manual operation, pulse train and homing											
		Number of position data sets	99-point (position, speed, timer, M code and various statuses)											
		Max positioning value	±2,000,000,000											
		Positioning method	Absolute / incremental											
		Accessory functions	Easy tuning, profile operation, sequence test mode, auto tuning, auto notch filter, vibration suppressing online learning, etc.											
Protective function (Alarm indication)			Overcurrent(OC), Overspeed(OS), Control power undervoltage(LVC), Overvoltage(HV), Encoder trouble(ET), Circuit trouble(CT), Memory Error(DE), Fuse Broken(FB), Motor Combination Error(CE), Braking transistor overheat(TH), Encoder Communication error(EC), CONT(Control signal) Error(CTE), Overload(OL), Main power undervoltage(LVP), Internal braking resistor overheat(RH1), External braking resistor overheat(RH2), Braking transistor error(RH3), Deviation overflow(OF), Amplifier overheat(AH), Encoder overheat(EH), Absolute data Lost(DL), Multi-turn data over flow(AF), Initial Error(IE), Command pulse Frequency Error(HF)											
Operation and display section of main body (keypad)			6-digit alphanumeric display with 7-segment LED 4 operation switches Analog monitor connector (CN6), status indication LED											
Working conditions	**Installation place**		Indoors (free from direct sunshine), altitude ≤ 1000m, free from corrosive and flammable gases, oil mist and dust In case of compliance with CE marking Models compliant with EU directive: pollution degree 2, over voltage category III											
	Temperature/humidity		-10 to 55°C/10 to 90%RH (without condensation)											
	Vibration / shock resistance		4.9m/s²/19.6m/s²											
Standards			UL/cUL (UL508c), CE marking (low voltage directive EN61800-5-1), RoHS directive											

*1: The figure is data determined when the amplifier is connected with an external resistor dedicated for each model.

*2: We will accept custom orders for models without dynamic brake.

VV Type

Outline of system configuration



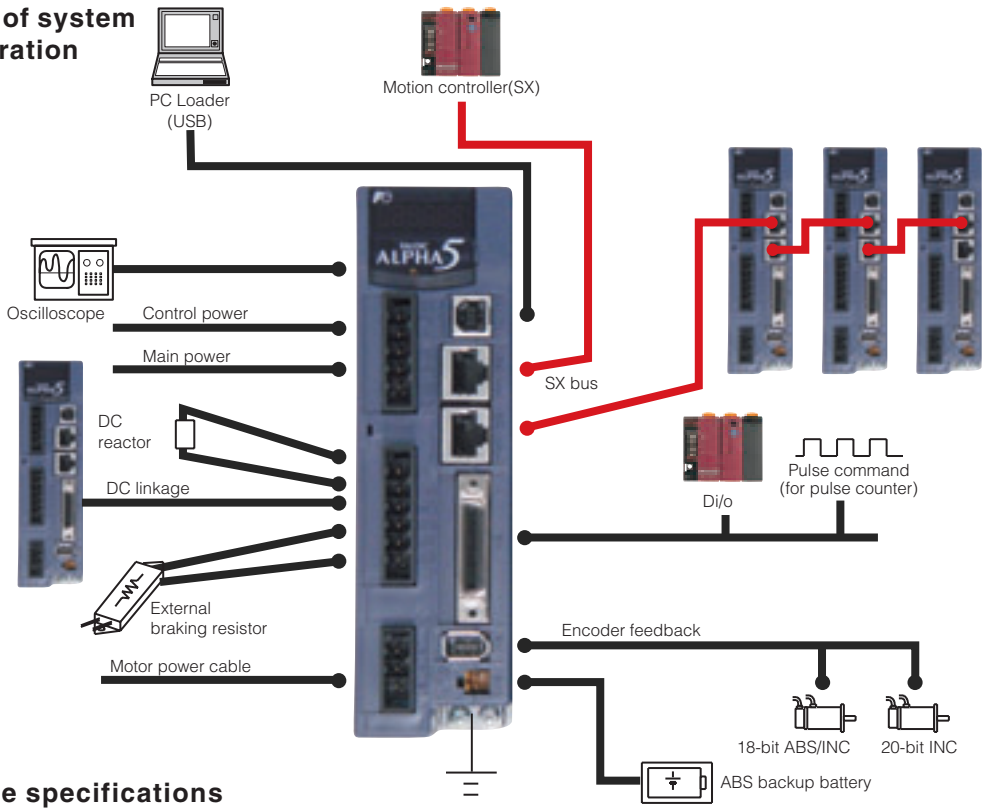
Interface specifications

Item		Specification
Command interface	Position control	Pulse input
	Speed control	Analog voltage input
	Torque control	Analog voltage input
Communication interface		Two RS-485 ports (for parameter editing and monitor)
		Our original protocol Modbus-RTU (being planned)
		9600/19200/38400 bps, connection of max. 31 axes

Terminal name	Symbol	Specification
Pulse input	CA,*CA CB,*CB	Pulse input under position control Differential input: max. input frequency ≤ 1.0MHz Open collector input: max. input frequency ≤ 200kHz (in case of signals at 90-degree phase difference, the above relationship is true for the four-fold frequency.) Pulse format: Command pulse/Command direction / Forward/Reverse pulse / A/B phase pulse — Select one of these formats with a parameter setting.
	PPI	Pull-up power input at open collector input (24VDC ±10%)
Pulse output	FFA,*FFA FFB,*FFB	Differential output: max. output frequency ≤ 1MHz Two sifnals at 90-degree phase difference Pulse output count setting n pulses/rev): 16 ≤ n ≤ 262144
	FFZ,*FFZ	Differential output: 1 pulse/rev
	FZ	Open collector output: 1 pulse/rev
	M5	Reference potential
Analog monitor voltage output	MON1 MON2	0V to ±10VDC Resolution: 14bits / ±full scale The output data depends on internal parameter.
	M5	Reference potential
Common for sequence I/O	COMIN	Common for sequence input signal
	COMOUT	Common for sequence output signal
Sequence input signal	CONT1 to CONT8	ON upon short circuit across contacts, OFF upon open circuit 12VDC-10% to 24VDC+10% Current consumption 20mA (per contact; used at 24VDC circuit voltage) Function of each signal depends on parameter setting Compatible with both sink and source input methods
Sequence output signal	OUT1 to OUT5	Short circuit upon ON, open circuit upon OFF 30VDC / 50mA (max.) Function of each signal depends on parameter setting Compatible with both sink and source output methods
Analog voltage input	VREF	Speed command input for speed control Input range: from -10 to 0 to -10V, input impedance 20kΩ Resolution: 15 bits / ±full scale
	TREF	Torque command input for torque control Input range: from -10 to 0 to +10V, input impedance 20kΩ Resolution: 14 bits / ±full scale
	P10	Power supply output for analog command (+10 VDC), output capacity 30 mA
	M5	Reference potential

VS Type

■ Outline of system configuration



■ Interface specifications

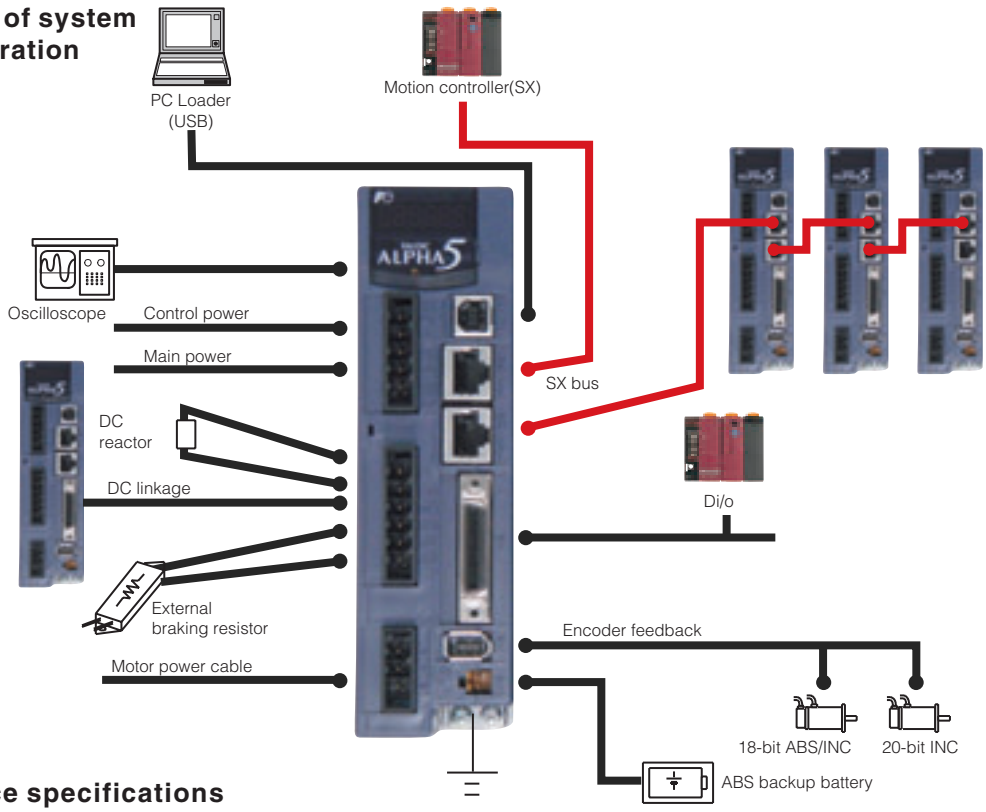
Item		Specification
Command interface	Position control	SX bus: IQ area
	Speed control	SX bus: IQ area
	Torque control	SX bus: IQ area
Communication interface		SX bus (for command interface, parameter editing and monitor)
		Our original protocol
		25Mbps, connection of max. 10 axes (standard)

Terminal name	Symbol	Specification
Pulse input	CA,*CA CB,*CB	Pulse input during operation with high speed counter function Differential input: max. input frequency ≤ 1.0MHz Open collector input: max. input frequency ≤ 200kHz (In case of signals at 90-degree phase difference, the above relationship is true for the four-fold frequency.) Pulse format: Command pulse/Command direction / Forward/Reverse pulse / A/B phase pulse — Select one of these formats with a parameter setting.
	PPI	Pull-up power input at open collector input (24VDC ± 10%)
Pulse output	FFA,*FFA FFB,*FFB	Differential output: max. output frequency ≤ 1MHz Two signals at 90-degree phase difference Pulse output count setting (n pulses/rev): 16 ≤ n ≤ 262144
	FFZ,*FFZ	Differential output 1 pulse/rev
	FZ	Open collector output 1 pulse/rev
	M5	Reference potential
Analog monitor voltage output	MON1 MON2	0V to ± 10VDC Resolution: 14 bits / ±full scale The output data depends on the internal parameter.
	M5	Reference potential
Common for sequence I/O	COMIN	Common for sequence input signal
	COMOUT	Common for sequence output signal
Sequence input signal	CONT1 to CONT5	ON upon short circuit across contacts, OFF upon open circuit 12VDC-10% to 24VDC +10% Current consumption 20mA (per contact; use at circuit voltage 24 VDC) Function of each signal depends on parameter setting Compatible with both sink and source input methods
Sequence output signal	OUT1 to OUT2	Short circuit upon ON, open circuit upon OFF 30VDC / 50mA (max.) Function of each signal depends on parameter setting Compatible with both sink and source output methods

Specifications of Servo Amplifier

LS Type

■ Outline of system configuration



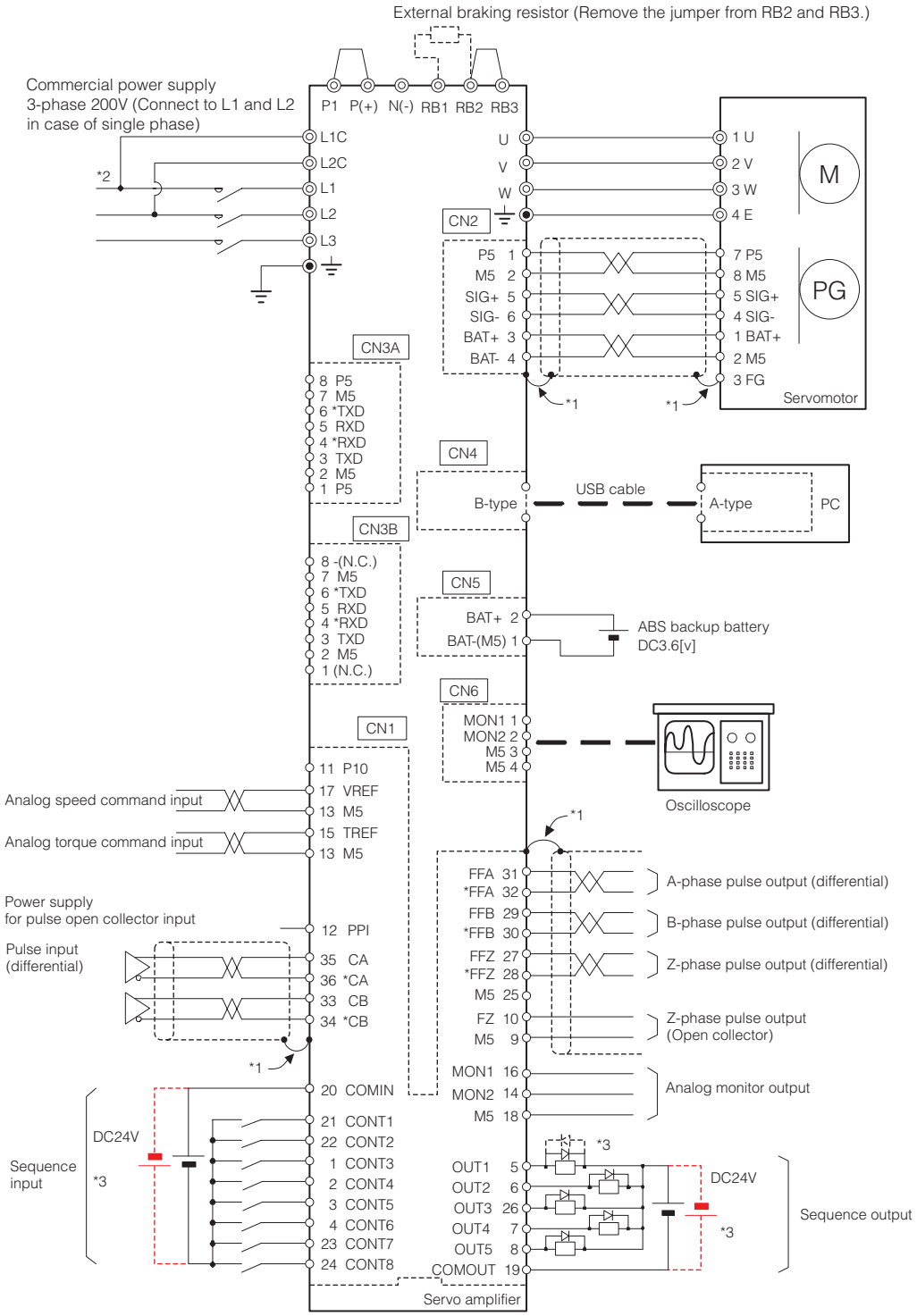
■ Interface specifications

Item		Specification
Command interface	Position control	SX bus: IQ area
	Speed control	SX bus: IQ area
Communication interface		SX bus (for command interface, parameter editing and monitor)
		Our original protocol
		25Mbps, connection of max. 10 axes (standard)

Terminal name	Symbol	Specification
Pulse input	CA,*CA CB,*CB	Pulse train command input for position control Differential input: max. input frequency ≤ 1.0MHz Open collector input: max. input frequency ≤ 200kHz (In case of signals at 90-degree phase difference, the above relationship is true for the four-fold frequency.) Pulse format: Command pulse/Command direction / Forward/Reverse pulse / A/B phase pulse — Select one of these formats with a parameter setting.
	PPI	Pull-up power input at open collector input (24VDC ± 10%)
Pulse output	FFA,*FFA FFB,*FFB	Differential output: max. output frequency ≤ 1MHz Two signals at 90-degree phase difference Pulse output count setting (n pulses/rev): 16 ≤ n ≤ 262144
	FFZ,*FFZ	Differential output 1 pulse/rev
	FZ	Open collector output 1 pulse/rev
	M5	Reference potential
Analog monitor voltage output	MON1 MON2	0V to ± 10VDC Resolution: 14 bits / ±full scale The output data depends on the internal parameter.
	M5	Reference potential
Common for sequence I/O	COMIN	Common for sequence input signal
	COMOUT	Common for sequence output signal
Sequence input signal	CONT1 to CONT5	ON upon short circuit across contacts, OFF upon open circuit 12VDC-10% to 24VDC +10% Current consumption 20mA (per contact; use at circuit voltage 24 VDC) Function of each signal depends on parameter setting Compatible with both sink and source input methods
Sequence output signal	OUT1 to OUT2	Short circuit upon ON, open circuit upon OFF 30VDC / 50mA (max.) Function of each signal depends on parameter setting Compatible with both sink and source output methods

Connection Diagram (Reference)

VV type



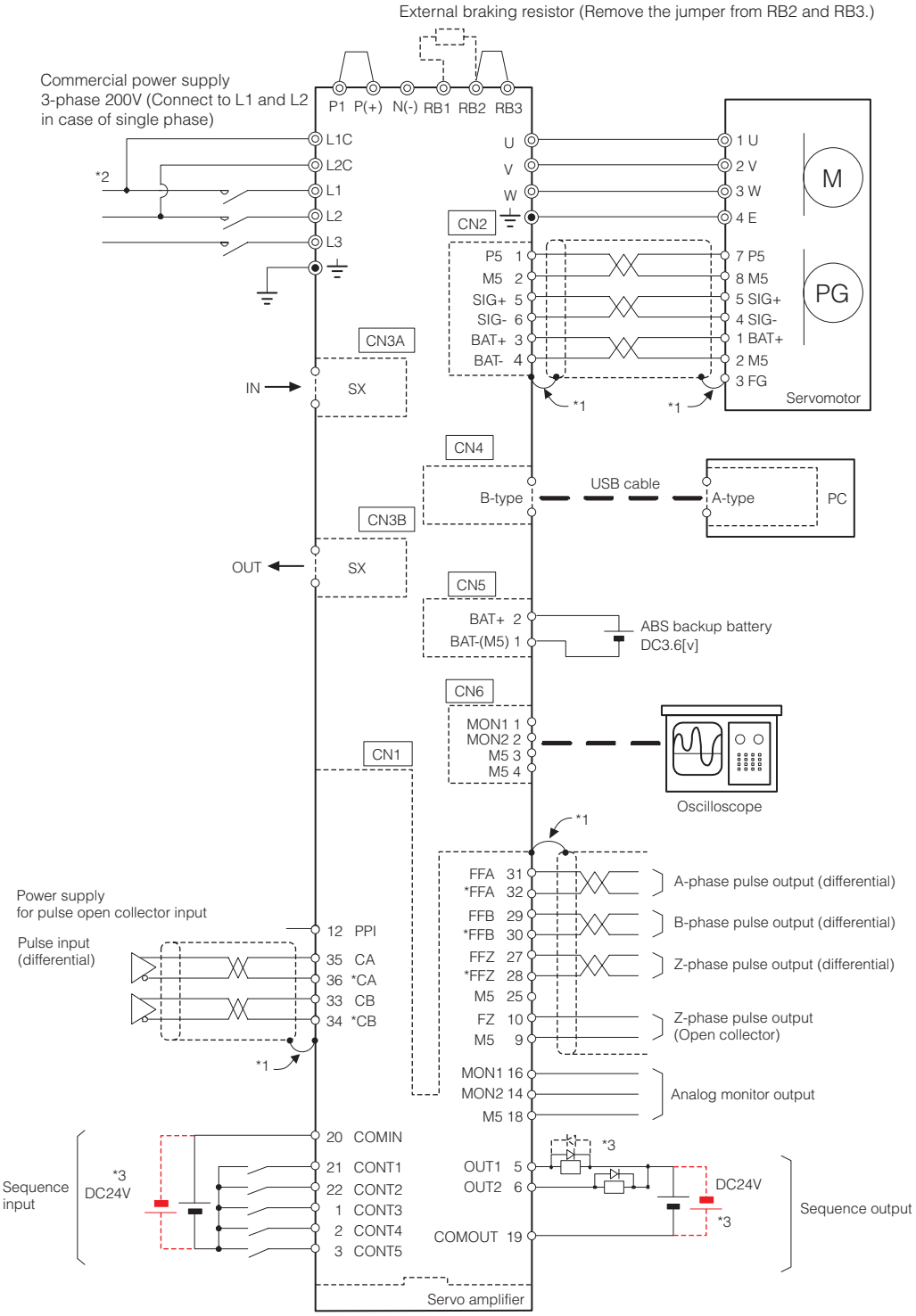
*1: Connect the shield to the connector shell of CN1 and CN2. The connector shell is at the ground potential (FG).
*2: Supply the control power (L1c and L2c) without fail. (The servo amplifier does not function with merely the main power supply.)
*3: To use in the source I/O, connect as shown with the broken line. Connect the surge absorber diode of the output load with the reverse polarity.

Caution

The diagram shown above is given as a reference for model selection.
When actually using the selected servo system, make wiring connections according to the connection diagram and instructions described in the user's manual.

Connection Diagram (Reference)

VS type, LS type



*1: Connect the shield to the connector shell of CN1 and CN2. The connector shell is at the ground potential (FG).
*2: Supply the control power (L1c and L2c) without fail. (The servo amplifier does not function with merely the main power supply.)
*3: To use in the source I/O, connect as shown with the broken line. Connect the surge absorber diode of the output load with the reverse polarity.

Caution

The diagram shown above is given as a reference for model selection.
When actually using the selected servo system, make wiring connections according to the connection diagram and instructions described in the user's manual.

GYS Motor

■Standard specifications

Motor type (-B) indicates the brake-incorporated type.	GYS500D5 - □□ 2 (-B)	GYS101D5 - □□ 2 (-B)	GYS201D5 - □□ 2 (-B)	GYS401D5 - □□ 2 (-B)	GYS751D5 - □□ 2 (-B)
Rated output [kW]	0.05	0.1	0.2	0.4	0.75
Rated torque [N · m]	0.159	0.318	0.637	1.27	2.39
Rated speed [r/min]	3000				
Max. speed [r/min]	6000				
Max. torque [N · m]	0.478	0.955	1.91	3.82	7.17
Inertia [kg · m²]	0.0192×10^{-4}	0.0371×10^{-4}	0.135×10^{-4}	0.246×10^{-4}	0.853×10^{-4}
( ) indicates brake-incorporated type.	(0.0223×10^{-4})	(0.0402×10^{-4})	(0.159×10^{-4})	(0.270×10^{-4})	(0.949×10^{-4})
Recommended load inertia ratio	30 times or less*				
Rated current [A]	0.85	0.85	1.5	2.7	4.8
Max. current [A]	2.55	2.55	4.5	8.1	14.4
Winding insulation class	Class B				
Operation duty type	Continuous				
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67. excluding the shaft sealing and connectors)				
Terminals (motor)	Cable 0.3m (with connector)				
Terminals (encoder)	Cable 0.3m (with connector)				
Overheat protection	Not provided (The servo amplifier detects temperature.)				
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)				
Shaft extension	Straight shaft				
Paint color	N1.5				
Encoder	18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)				
Vibration level	V5 or below				
Installation place, altitude and environment	For indoor use, 1000m or below, locations without corrosive and flamable gases, oil mist and dust				
Ambient temperature, humidity	-10 to +40°C, within 90% RH max.(without condensation)				
Vibration resistance [m/s²]	49				
Mass [kg]	0.45	0.55	1.2	1.8	3.4
( ) indicates brake-incorporated type.	(0.62)	(0.72)	(1.7)	(2.3)	(4.2)
Compliance with standards	UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive				

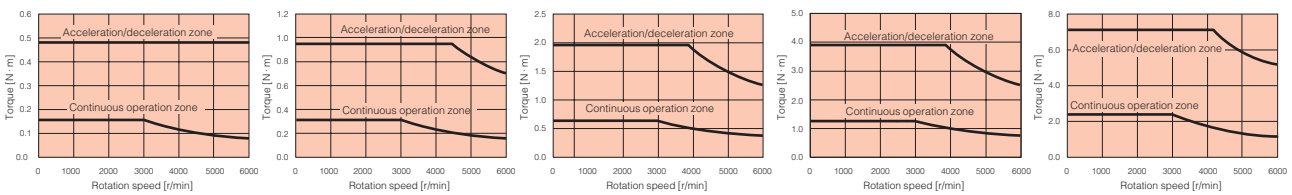
* The load inertia ratio to the inertia of servo motor. If the moment of load inertia ratio value, please contact us.

■Brake specification (motor equipped with a brake)

Motor type	GYS500D5 - □□ 2-B	GYS101D5 - □□ 2-B	GYS201D5 - □□ 2-B	GYS401D5 - □□ 2-B	GYS751D5 - □□ 2-B
Static friction torque [N · m]	0.34		1.27		2.45
Rated DC voltage [V]	DC24±10%				
Attraction time [ms]	35		40		60
Release time [ms]	10		20		25
Power consumption [W]	6.1 (at 20°C)		7.3 (at 20°C)		8.5 (at 20°C)

■Torque characteristics diagrams (at 3-phase 200 [V] or single-phase 230 [V] source voltage)

GYS500D5- □□ 2	GYS101D5- □□ 2	GYS201D5- □□ 2	GYS401D5- □□ 2	GYS751D5- □□ 2
0.05kW	0.1kW	0.2kW	0.4kW	0.75kW



These characteristics indicate typical values of each servomotor combined with the corresponding RYT type servo amplifier.
The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYS500, 101: 200 × 200 × 6 [mm]
- Model GYS201, 401: 250 × 250 × 6 [mm]
- Model GYS751: 300 × 300 × 6 [mm]

Specifications of Servomotor

GYC Motor

■Standard specifications

Motor type (-B) indicates the brake-incorporated type.	GYC101D5 - □□ 2 (-B)	GYC201D5 - □□ 2 (-B)	GYC401D5 - □□ 2 (-B)	GYC751D5 - □□ 2 (-B)	GYC102D5 - □□ 2 (-B)	GYC152D5 - □□ 2 (-B)
Rated output [kW]	0.1	0.2	0.4	0.75	1.0	1.5
Rated torque [N · m]	0.318	0.637	1.27	2.39	3.18	4.78
Rated speed [r/min]	3000					
Max. speed [r/min]	6000				5000	
Max. torque [N · m]	0.955	1.91	3.82	7.17	9.55	14.3
Inertia [kg · m²]	0.0577×10^{-4}	0.213×10^{-4}	0.408×10^{-4}	1.21×10^{-4}	3.19×10^{-4}	4.44×10^{-4}
( ) indicates brake-incorporated type.	(0.0727×10^{-4})	(0.288×10^{-4})	(0.483×10^{-4})	(1.66×10^{-4})	(5.29×10^{-4})	(6.54×10^{-4})
Recommended load inertia ratio	30 times or less*1				20 times or less*1	
Rated current [A]	1.0	1.5	2.6	4.8	6.7	9.6
Max. current [A]	3.0	4.5	7.8	14.4	20.1	28.8
Winding insulation class	Class B				Class F	
Operation duty type	Continuous					
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67. excluding the shaft sealing and connectors)				Totally enclosed, self-cooled (IP 67. excluding the shaft sealing)*2	
Terminals (motor)	Cable 0.3m (with connector)				Cannon connector	
Terminals (encoder)	Cable 0.3m (with connector)				Cannon connector	
Overheat protection	Not provided (The servo amplifier detects temperature.)					
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)					
Shaft extension	Straight shaft					
Paint color	N1.5					
Encoder	18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)					
Vibration level	V5 or below				Up to rated rotation speed: V10 or below Over rated rotation speed and up to 5000r/min: V15 or less	
Installation place, altitude and environment	For indoor use, 1000m or below, locations without corrosive and flamable gases, oil mist and dust					
Ambient temperature, humidity	-10 to +40°C, within 90% RH max.(without condensation)					
Vibration resistance [m/s²]	49				24.5	
Mass [kg]	0.75	1.3	1.9	3.5	5.7	7.0
( ) indicates brake-incorporated type.	(1.0)	(1.9)	(2.6)	(4.3)	(8.0)	(9.8)
Compliance with standards	UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive					

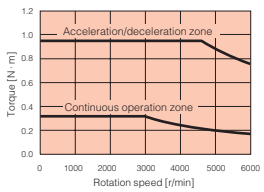
*1 The load inertia ratio to the inertia of servo motor. If the moment of load inertia ratio value, please contact us.
*2 If the motor is used in the environment rated to IP67 protection degree, use the wiring connector suitable for the protection degree.

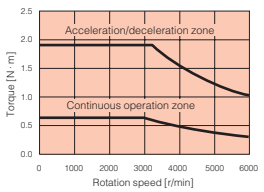
■Brake specification (motor equipped with a brake)

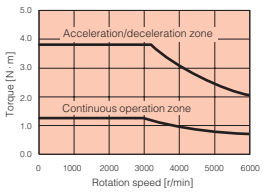
Motor type	GYC101D5 - □□ 2-B	GYC201D5 - □□ 2-B	GYC401D5 - □□ 2-B	GYC751D5 - □□ 2-B	GYC102D5 - □□ 2-B	GYC152D5 - □□ 2-B
Static friction torque [N · m]	0.318	1.27		2.39	17	
Rated DC voltage [V]	DC24±10%					
Attraction time [ms]	60	80		50	120	
Release time [ms]	40			80	30	
Power consumption [W]	6.5 (at 20°C)	9.0 (at 20°C)		8.5 (at 20°C)	12(at 20°C)	

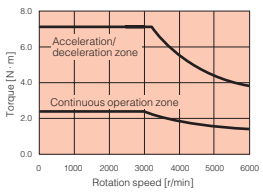
■Torque characteristics diagrams (at 3-phase 200 [V] or single-phase 230 [V] source voltage)

GYC101D5- □□2	GYC201D5- □□2	GYC401D5- □□2	GYC751D5- □□2
0.1kW	0.2kW	0.4kW	0.75kW

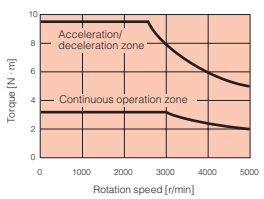


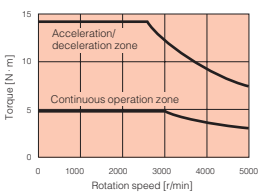






GYC102D5- □□2	GYC152D5- □□2
1.0kW	1.5kW





These characteristics indicate typical values of each servomotor combined with the corresponding RY□ type servo amplifier.
The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYC101, 201, 401: 250 × 250 × 6 [mm]
- Model GYC751: 300 × 300 × 6 [mm]
- Model GYC102D: 300 × 300 × 12 [mm]
- Model GYC152D: 400 × 400 × 12 [mm]

GYG Motor [2000r/min]

■Standard specifications

Motor type (-B) indicates the brake-incorporated type.	GYG501C5 - □□ 2 (-B)	GYG751C5 - □□ 2 (-B)	GYG102C5 - □□ 2 (-B)
Rated output [kW]	0.5	0.75	1.0
Rated torque [N · m]	2.39	3.58	4.77
Rated speed [r/min]	2000		
Max. speed [r/min]	3000		
Max. torque [N · m]	7.2	10.7	14.3
Inertia [kg · m²]	7.96×10^{-4}	11.55×10^{-4}	15.14×10^{-4}
( ) indicates brake-incorporated type.	(10.0×10^{-4})	(13.6×10^{-4})	(17.2×10^{-4})
Recommended load inertia ratio	10 times or less*1		
Rated current [A]	3.5	5.2	6.4
Max. current [A]	10.5	15.6	19.2
Winding insulation class	Class F		
Operation duty type	Continuous		
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67. excluding the shaft sealing)*2		
Terminals (motor)	Cannon connector		
Terminals (encoder)	Cannon connector		
Overheat protection	Not provided (The servo amplifier detects temperature.)		
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)		
Shaft extension	Straight shaft		
Paint color	N1.5		
Encoder	18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)		
Vibration level	V10 or below		
Installation place, altitude and environment	For indoor use, 1000m or below, locations without corrosive and flamable gases, oil mist and dust		
Ambient temperature, humidity	-10 to +40°C, within 90% RH max.(without condensation)		
Vibration resistance [m/s²]	24.5		
Mass [kg]	5.3	6.4	7.5
( ) indicates brake-incorporated type.	(7.5)	(8.6)	(9.7)
Compliance with standards	UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive		

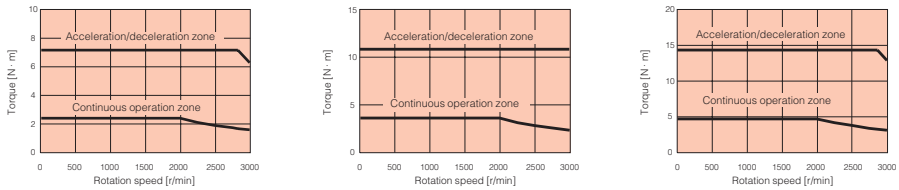
*1 The load inertia ratio to the inertia of servo motor. If the moment of load inertia ratio value, please contact us.
*2 If the motor is used in the environment rated to IP67 protection degree, use the wiring connector suitable for the protection degree.

■Brake specification (motor equipped with a brake)

Motor type	GYG501C5 - □□ 2-B	GYG751C5 - □□ 2-B	GYG102C5 - □□ 2-B
Static friction torque [N · m]	17		
Rated DC voltage [V]	DC24±10%		
Attraction time [ms]	120		
Release time [ms]	30		
Power consumption [W]	12(at 20°C)		

■Torque characteristics diagrams (at 3-phase 200[V])

GYG501C5- □□ 2	GYG751C5- □□ 2	GYG102C5- □□ 2
0.5kW	0.75kW	1.0kW



These characteristics indicate typical values of each servomotor combined with the corresponding RYT type servo amplifier.
The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

· Model GYG501C, 751C, 102C: 300 × 300 × 12 [mm]

Specifications of Servomotor

GYG Motor [1500r/min]

■Standard specifications

Motor type (-B) indicates the brake-incorporated type.	GYG501B5 - □□ 2 (-B)	GYG851B5 - □□ 2 (-B)
Rated output [kW]	0.5	0.85
Rated torque [N · m]	3.18	5.41
Rated speed [r/min]	1500	
Max. speed [r/min]	3000	
Max. torque [N · m]	9.5	16.2
Inertia [kg · m²]	11.55×10^{-4}	15.15×10^{-4}
( ) indicates brake-incorporated type.	(13.6×10^{-4})	(17.3×10^{-4})
Recommended load inertia ratio	10 times or less*1	
Rated current [A]	4.7	7.3
Max. current [A]	14.1	21.9
Winding insulation class	Class F	
Operation duty type	Continuous	
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67. excluding the shaft sealing)*2	
Terminals (motor)	Cannon connector	
Terminals (encoder)	Cannon connector	
Overheat protection	Not provided (The servo amplifier detects temperature.)	
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)	
Shaft extension	Straight shaft	
Paint color	N1.5	
Encoder	18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)	
Vibration level	V10 or below	
Installation place, altitude and environment	For indoor use, 1000m or below, locations without corrosive and flamable gases, oil mist and dust	
Ambient temperature, humidity	-10 to +40°C, within 90% RH max.(without condensation)	
Vibration resistance [m/s²]	24.5	
Mass [kg]	6.4	7.5
( ) indicates brake-incorporated type.	(8.6)	(9.7)
Compliance with standards	UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive	

*1 The load inertia ratio to the inertia of servo motor. If the moment of load inertia ratio value, please contact us.

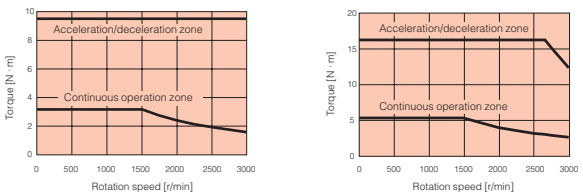
*2 If the motor is used in the environment rated to IP67 protection degree, use the wiring connector suitable for the protection degree.

■Brake specification (motor equipped with a brake)

Motor type	GYG501B5 - □□ 2-B	GYG851B5 - □□ 2-B
Static friction torque [N · m]	17	
Rated DC voltage [V]	DC24±10%	
Attraction time [ms]	120	
Release time [ms]	30	
Power consumption [W]	12(at 20°C)	

■Torque characteristics diagrams (at 3-phase 200[V])

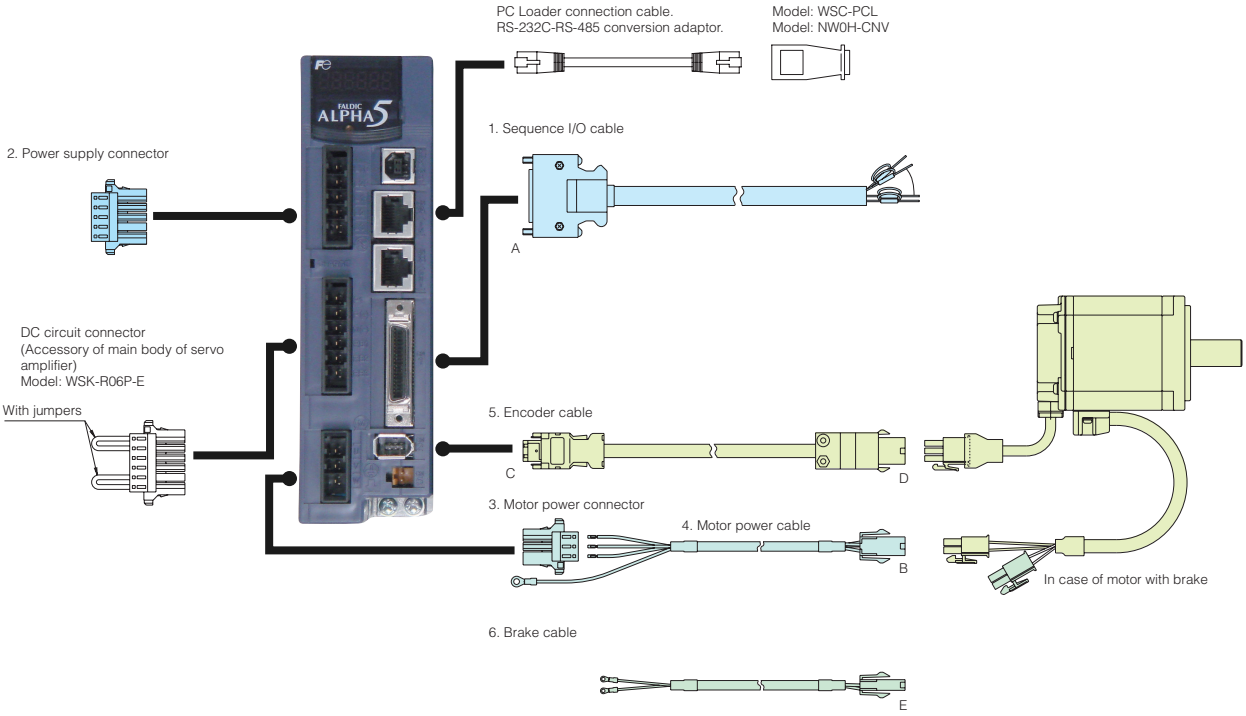
GYG501B5- □□ 2	GYG851B5- □□ 2
0.5kW	0.85kW



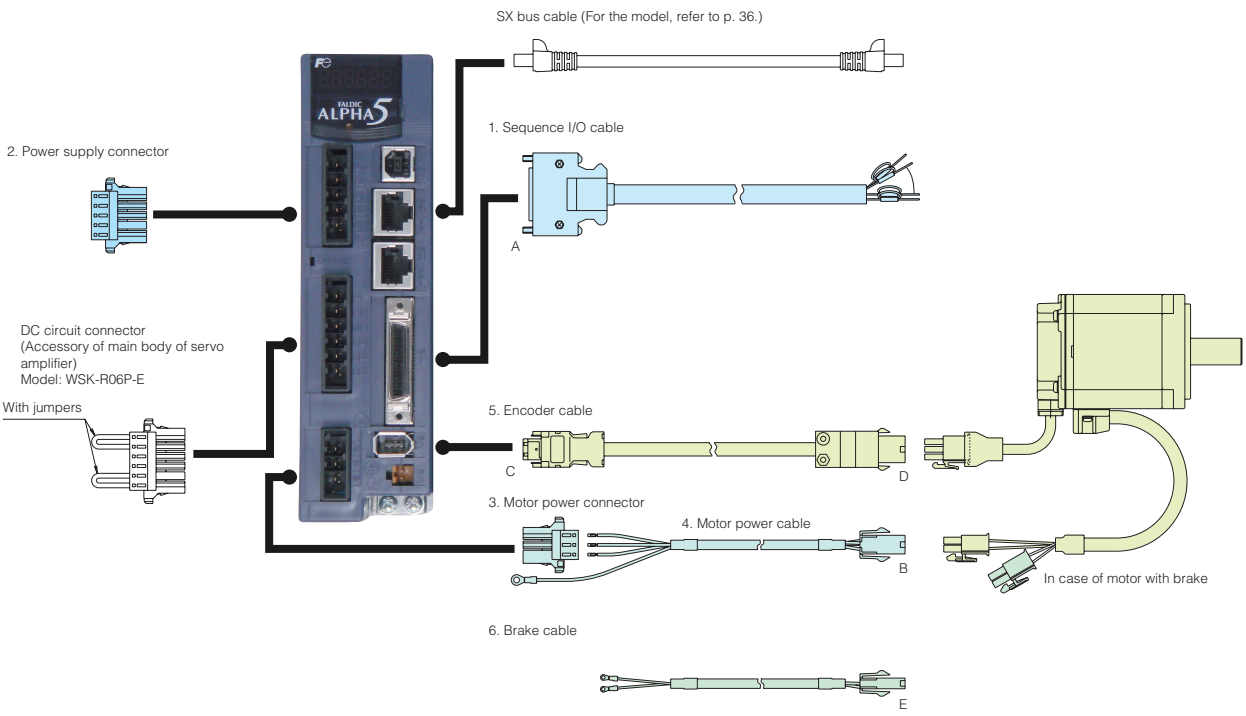
These characteristics indicate typical values of each servomotor combined with the corresponding RY□ type servo amplifier.
The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

· Model GYG501B, 851B: 300 × 300 × 12 [mm]

VV type



VS type, LS type



Option/Peripheral Equipment

Option

■Basic option

Motor series	Rated speed	Brake	Rated output	1. Sequence I/O cable (between host and amplifier)	2. Power supply connector	3. Motor power connector (on amplifier side)	4. Motor power cable (between amplifier and motor)	5. Encoder cable (between amplifier and motor)	6. Brake cable
GYS motor	3000r/min	Without brake	0.05kW to 0.75kW	WSC-D36P03	WSK-S05P-E	WSK-M03P-E	WSC-M04P02-E WSC-M04P05-E WSC-M04P10-E WSC-M04P20-E	WSC-P06P02-E WSC-P06P05-E WSC-P06P10-E WSC-P06P20-E	—
		With brake	0.05kW to 0.75kW						WSC-M02P02-E WSC-M02P05-E WSC-M02P10-E WSC-M02P20-E
GYC motor	3000r/min	Without brake	0.05kW to 0.75kW						—
		With brake	0.05kW to 0.75kW						WSC-M02P02-E WSC-M02P05-E WSC-M02P10-E WSC-M02P20-E
		Without brake	1.0kW to 1.5kW				WSK-M04P-CB	WSC-P06P05-C WSC-P06P10-C WSC-P06P20-C	—
		With brake	1.0kW to 1.5kW				WSK-M06P-CB		*No cable is required.
GYG motor	2000r/min	Without brake	0.5kW to 1.0kW				*1		—
		With brake	0.5kW to 1.0kW				*2		*No cable is required.
	1500r/min	Without brake	0.5kW to 0.85kW				*1		—
		With brake	0.5kW to 0.85kW				*2		*No cable is required.

*1 The customer is requested to fabricate the cable using the connector for motor power (motor without brake): WSK-M04P-CA.
*2 The customer is requested to fabricate the cable using the connector for motor power (motor with brake): WSK-M06P-CA.

■Connector kit

* Use this connector if the customer fabricates the cable yourself.

Motor series	Rated speed	Brake	Rated output	A Sequence I/O connector	B Motor power connector (on motor side)	Encoder connector		E Brake connector
						C Amplifier side	D Motor side	
GYS motor	3000r/min	Without brake	0.05kW to 0.75kW	WSK-D36P	WSK-M04P-E	WSK-P06P-M	WSK-P09P-D	—
		With brake	0.05kW to 0.75kW					WSK-M02P-E
GYC motor	3000r/min	Without brake	0.05kW to 0.75kW					—
		With brake	0.05kW to 0.75kW					WSK-M02P-E
		Without brake	1.0kW to 1.5kW		WSK-M04P-CB		WSK-P06P-C	—
		With brake	1.0kW to 1.5kW		WSK-M06P-CB			
GYG motor	2000r/min	Without brake	0.5kW to 1.0kW		WSK-M04P-CA			
		With brake	0.5kW to 1.0kW		WSK-M06P-CA			
	1500r/min	Without brake	0.5kW to 0.85kW		WSK-M04P-CA			
		With brake	0.5kW to 0.85kW		WSK-M06P-CA			

Peripheral equipment

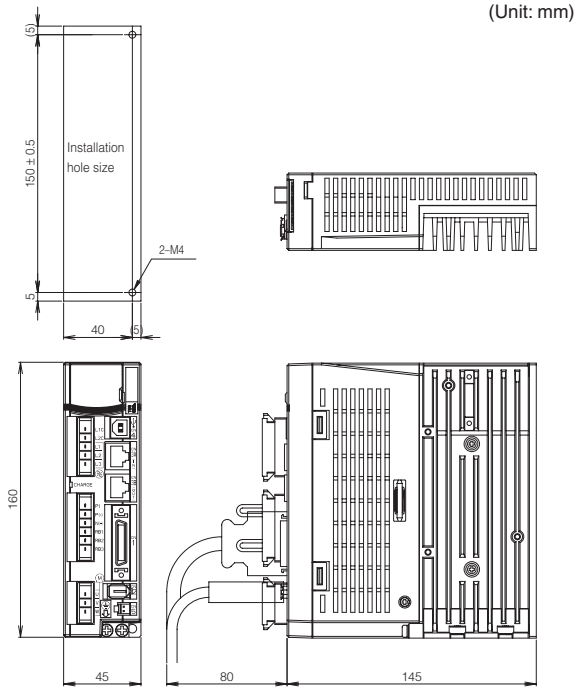
Rated speed	Input power supply	Servo amplifier type	Output of applied motor [kW]	Power supply capacity [kVA]	Input current [A]	Power filter	AC reactor	DC reactor	Molded case circuit breaker	Ground fault interruptor	Electromagnetic contactor
3000r/min	Single-phase200V	RYT500D5-□□2	0.05	0.1	0.7	RNFTC06-20	ACR2-0.4A	DCR2-0.2	EA32AC/3	EG32AC/3	SC-03
		RYT101D5-□□2	0.1	0.2	1.2			DCR2-0.4			
		RYT201D5-□□2	0.2	0.4	2.2		ACR2-0.75A	DCR2-0.75	EA32AC/5	EG32AC/5	
		RYT401D5-□□2	0.4	0.8	4.2	RNFTC10-20	ACR2-1.5A	DCR2-1.5	EA32C/10	EG32AC/10	
		RYT751D5-□□2	0.75	1.5	7.7	RNFTC20-20	ACR2-2.2A	DCR2-2.2	EA32AC/15	EG32AC/15	SC-0
	3-phase200V	RYT500D5-□□2	0.05	0.1	0.4	RNFTC06-20	ACR2-0.4A	DCR2-0.2	EA33AC/3	EG33AC/3	SC-03
		RYT101D5-□□2	0.1	0.2	0.7						
		RYT201D5-□□2	0.2	0.4	1.4			DCR2-0.4			
		RYT401D5-□□2	0.4	0.8	2.7		ACR2-0.75A	DCR2-0.75	EA33AC/5	EG33AC/5	
		RYT751D5-□□2	0.75	1.5	5.0	RNFTC10-20	ACR2-1.5A	DCR2-1.5	EA33C/10	EG33AC/10	
		RYT102D5-□□2	1.0	2.0	6.6		ACR2-2.2A	DCR2-2.2A	EA33AC/15	EG33AC/15	
		RYT152D5-□□2	1.5	2.9	9.8	RNFTC20-20			EA33AC/20	EG33AC/20	SC-4-1
2000r/min	Single-phase200V	RYT501C5-□□2	0.5	1.0	5.2	RNFTC10-20	ACR2-1.5A	DCR2-1.5	EA32AC/10	EG32AC/10	SC-03
		RYT751C5-□□2	0.75	1.5	7.7	RNFTC20-20	ACR2-2.2A	DCR2-2.2	EA32AC/15	EG32AC/15	SC-0
	3-phase200V	RYT501C5-□□2	0.5	1.0	3.3	RNFTC06-20	ACR2-0.75A	DCR2-0.75	EA33AC/10	EG33AC/10	SC-03
		RYT751C5-□□2	0.75	1.5	5.0	RNFTC10-20	ACR2-1.5A	DCR2-1.5	EA33AC/10	EG33AC/10	
		RYT102C5-□□2	1.0	2.0	6.6		ACR2-2.2A	DCR2-2.2A	EA33AC/15	EG33AC/15	
		RYT152C5-□□2	1.5	2.9	14.7	RNFTC20-20			EA33AC/20	EG33AC/20	
1500r/min	Single-phase200V	RYT501B5-□□2	0.5	1.0	5.2	RNFTC10-20	ACR2-1.5A	DCR2-1.5	EA32AC/10	EG32AC/10	SC-03
	3-phase200V	RYT501B5-□□2	0.5	1.0	3.3	RNFTC06-20	ACR2-0.75A	DCR2-0.75	EA33AC/10	EG33AC/10	SC-03
		RYT851B5-□□2	0.85	1.7	8.4	RNFTC10-20	ACR2-1.5A	DCR2-1.5			
		RYT132B5-□□2	1.3	2.6	12.8	RNFTC20-20	ACR2-2.2A	DCR2-2.2A	EA33AC/15	EG33AC/15	SC-0

Servo amplifier

■Frame 1

Rated speed	Applied motor output	Type
3000r/min	0.05kW	RYT500D5- □□ 2
	0.1kW	RYT101D5- □□ 2
	0.2kW	RYT201D5- □□ 2

(Unit: mm)

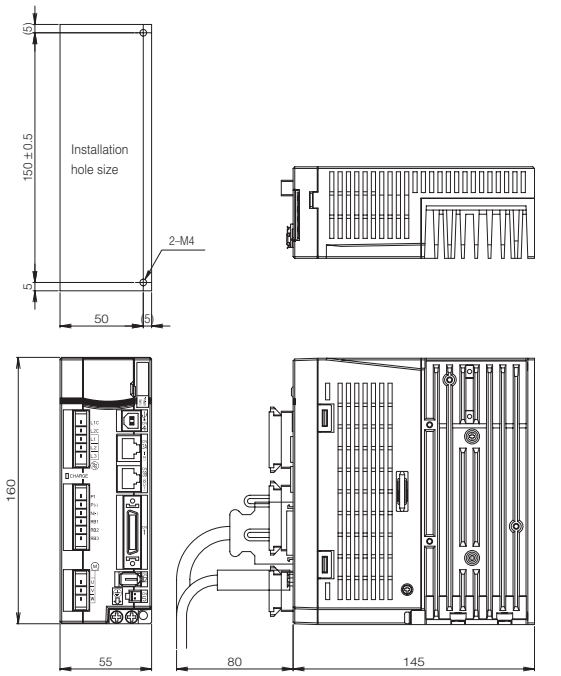


[Mass: 0.7kg]

■Frame 2

Rated speed	Applied motor output	Type
3000r/min	0.4kW	RYT401D5- □□ 2

(Unit: mm)

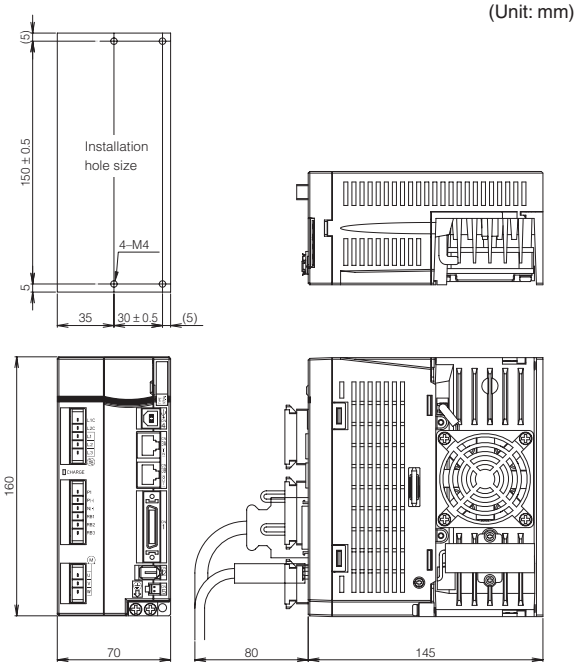


[Mass: 0.9kg]

■Frame 3

Rated speed	Applied motor output	Type
3000r/min	0.75kW	RYT751D5- □□ 2
2000r/min	0.5kW	RYT501C5- □□ 2
	0.75kW	RYT751C5- □□ 2
1500r/min	0.5kW	RYT501B5- □□ 2

(Unit: mm)

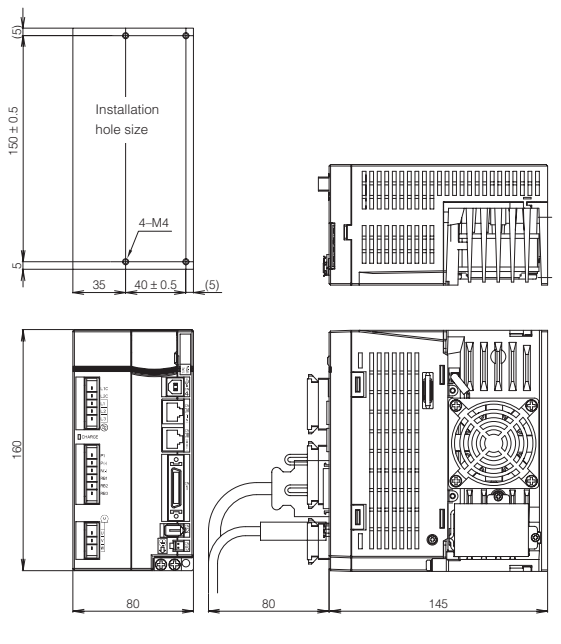


[Mass: 1.3kg]

■Frame 4

Rated speed	Applied motor output	Type
3000r/min	1.0kW	RYT102D5- □□ 2
	1.5kW	RYT152D5- □□ 2
2000r/min	1.0kW	RYT102C5- □□ 2
1500r/min	0.85kW	RYT851B5- □□ 2

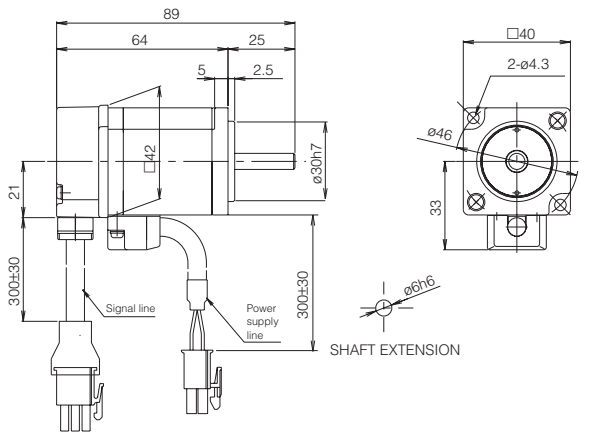
(Unit: mm)



[Mass: 1.4kg]

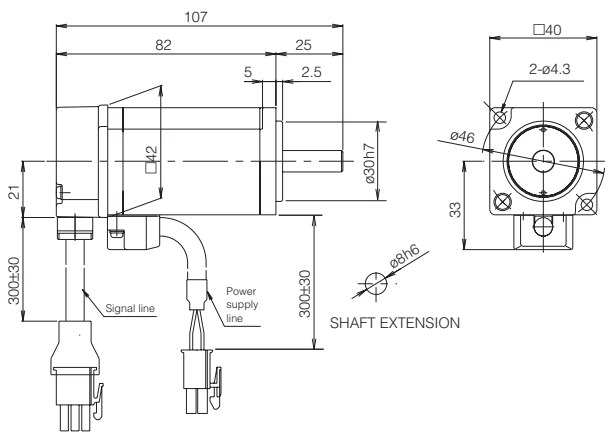
GYS Motor

● **GYS500D5-□B2** (Unit: mm)



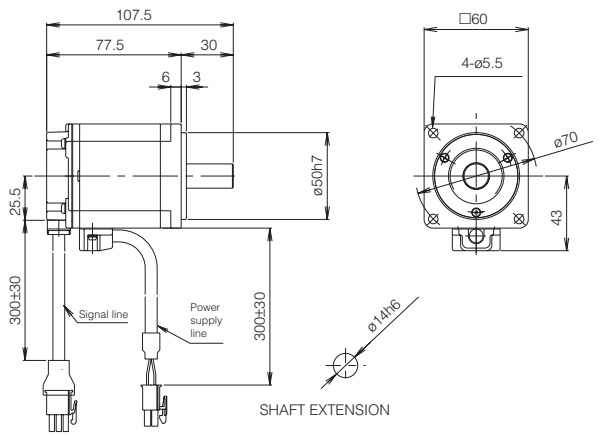
[Mass: 0.45kg]

● **GYS101D5-□B2** (Unit: mm)



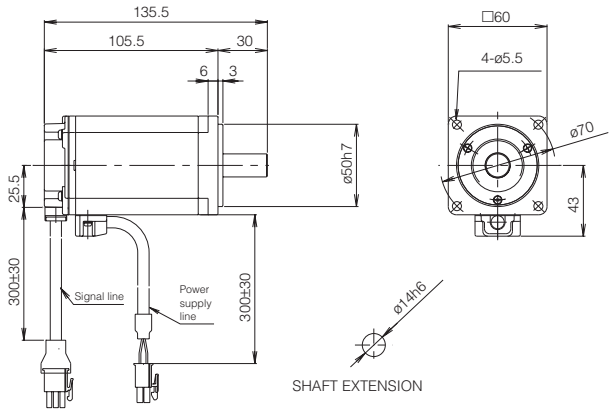
[Mass: 0.55kg]

● **GYS201D5-□B2** (Unit: mm)



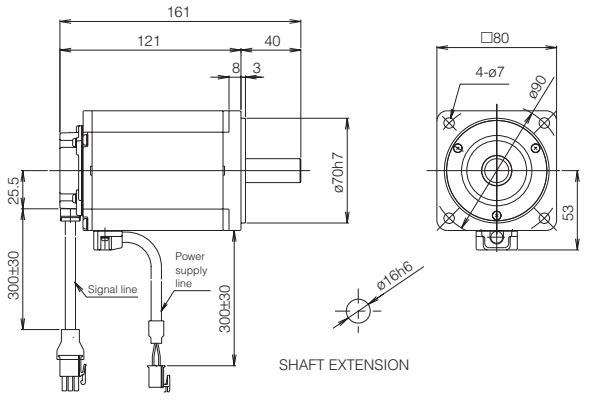
[Mass: 1.2kg]

● **GYS401D5-□B2** (Unit: mm)



[Mass: 1.8kg]

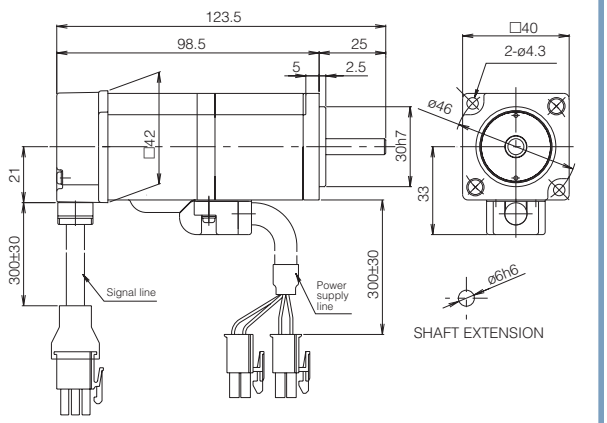
● **GYS751D5-□B2** (Unit: mm)



[Mass: 3.4kg]

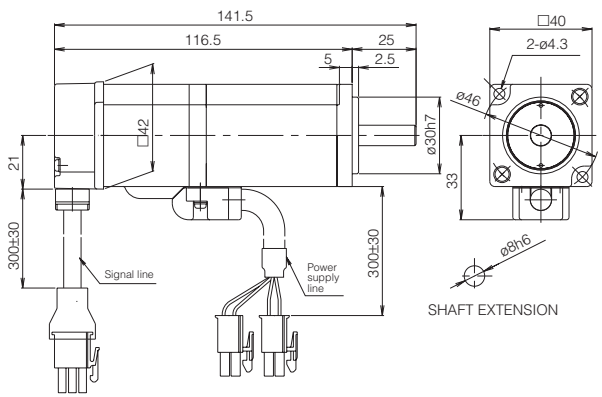
GYS Motor (With a brake)

● **GYS500D5-□ B2-B** (Unit: mm)



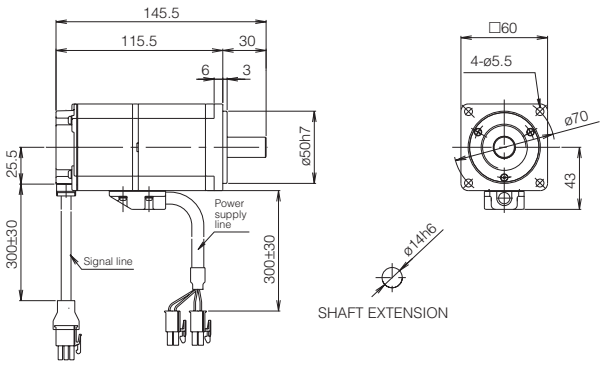
[Mass: 0.62kg]

● **GYS101D5-□ B2-B** (Unit: mm)



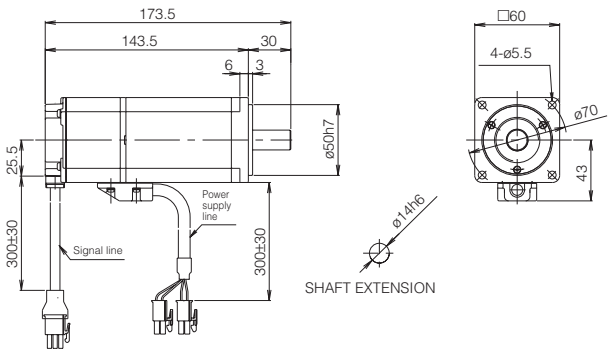
[Mass: 0.72kg]

● **GYS201D5-□ B2-B** (Unit: mm)



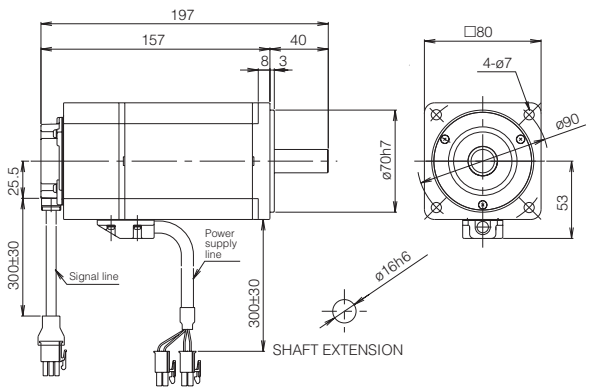
[Mass: 1.7kg]

● **GYS401D5-□ B2-B** (Unit: mm)



[Mass: 2.3kg]

● **GYS751D5-□ B2-B** (Unit: mm)

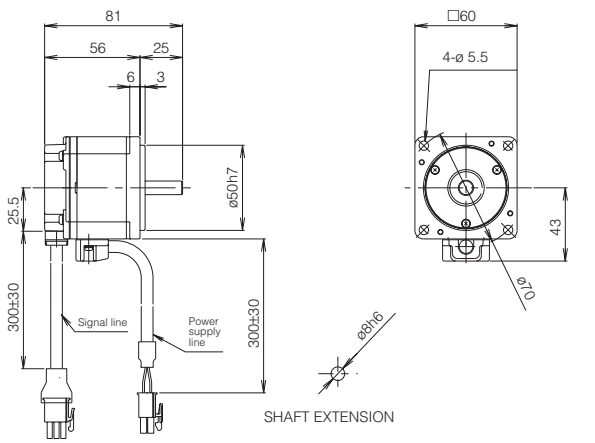


[Mass: 4.2kg]

GYC Motor

● GYC101D5-□ B2

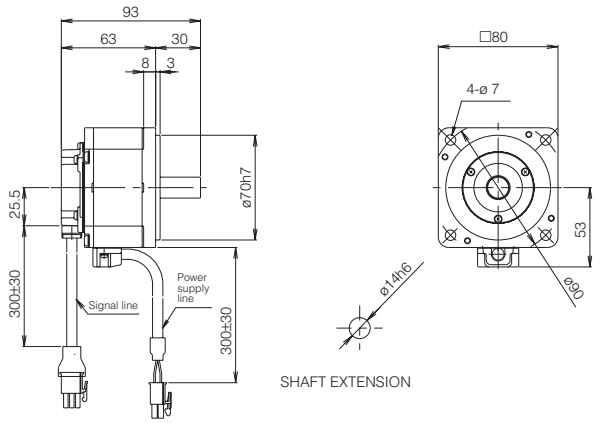
(Unit: mm)



[Mass: 0.75kg]

● GYC201D5-□ B2

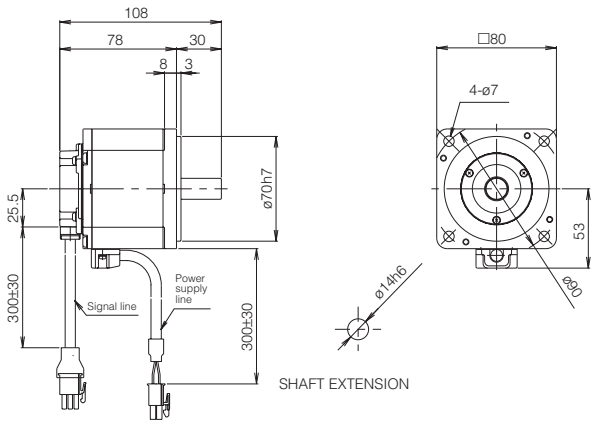
(Unit: mm)



[Mass: 1.3kg]

● GYC401D5-□ B2

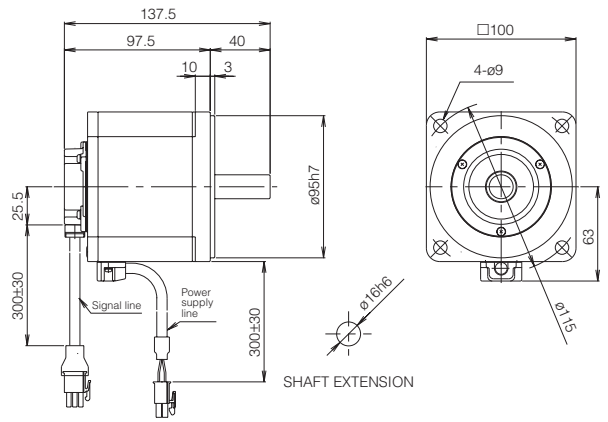
(Unit: mm)



[Mass: 1.9kg]

● GYC751D5-□ B2

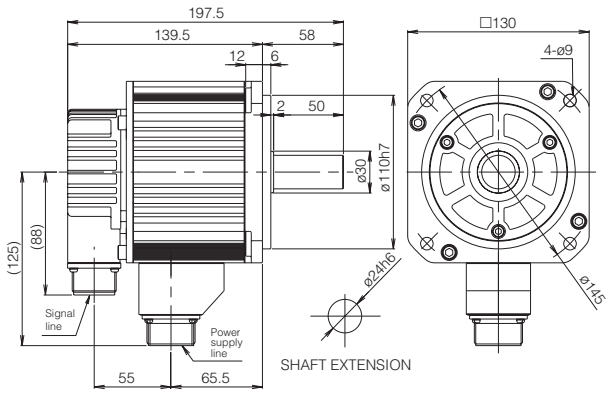
(Unit: mm)



[Mass: 3.5kg]

● GYC102D5-□ B2

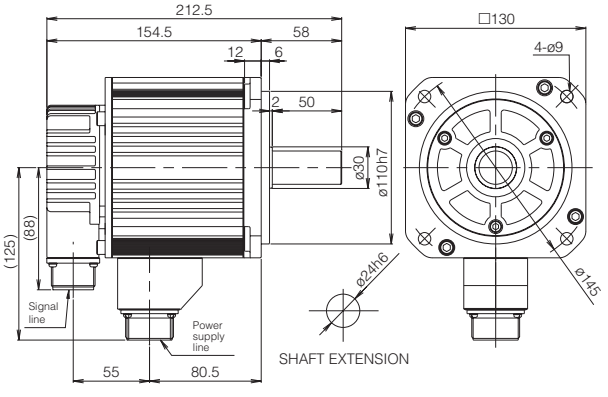
(Unit: mm)



[Mass: 5.7kg]

● GYC152D5-□ B2

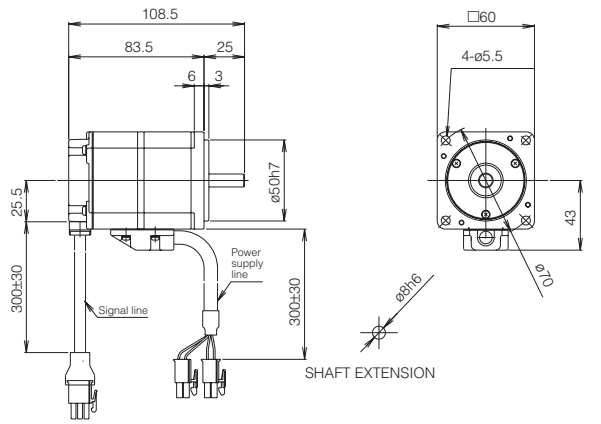
(Unit: mm)



[Mass: 7.0kg]

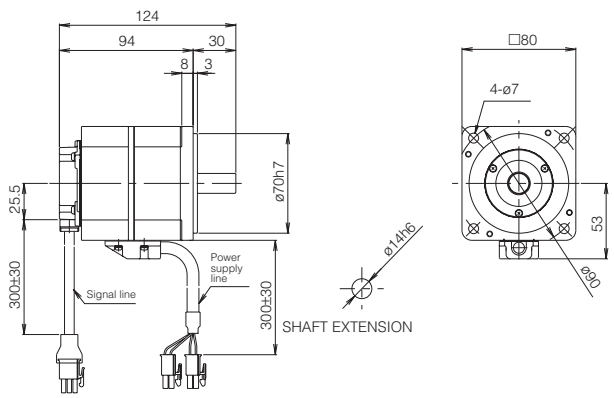
GYC Motor (With a brake)

● **GYC101D5-□ B2-B** (Unit: mm)



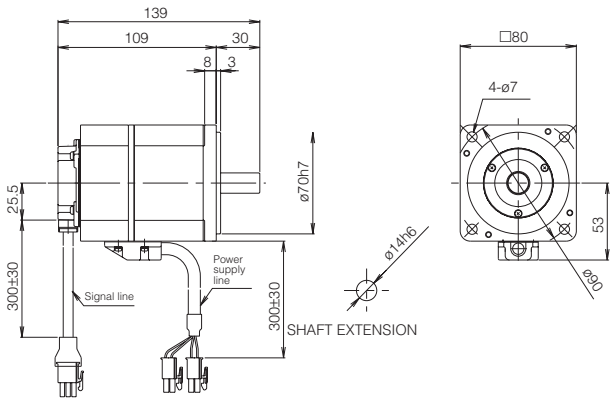
[Mass: 1.0kg]

● **GYC201D5-□ B2-B** (Unit: mm)



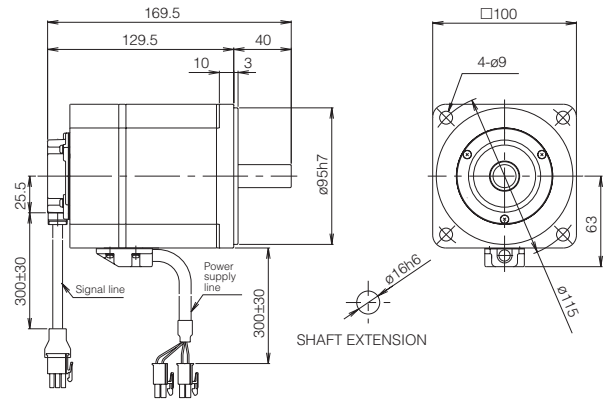
[Mass: 1.9kg]

● **GYC401D5-□ B2-B** (Unit: mm)



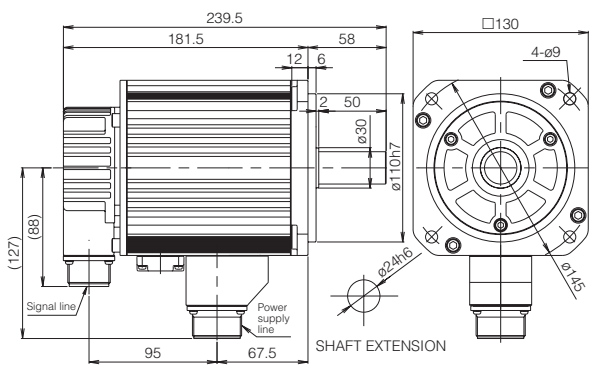
[Mass: 2.6kg]

● **GYC751D5-□ B2-B** (Unit: mm)



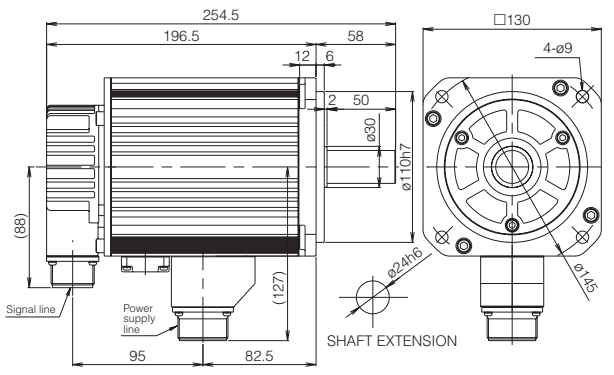
[Mass: 4.3kg]

● **GYC102D5-□ B2-B** (Unit: mm)



[Mass: 8.0kg]

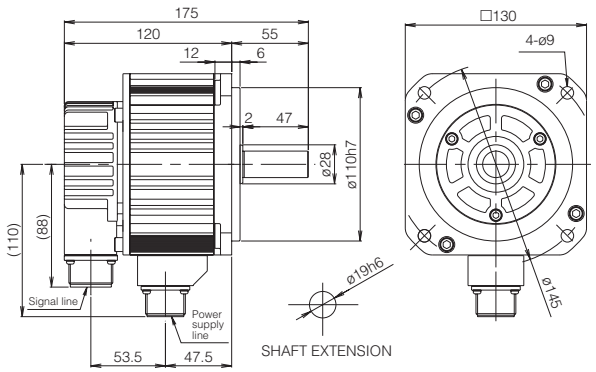
● **GYC152D5-□ B2-B** (Unit: mm)



[Mass: 9.8kg]

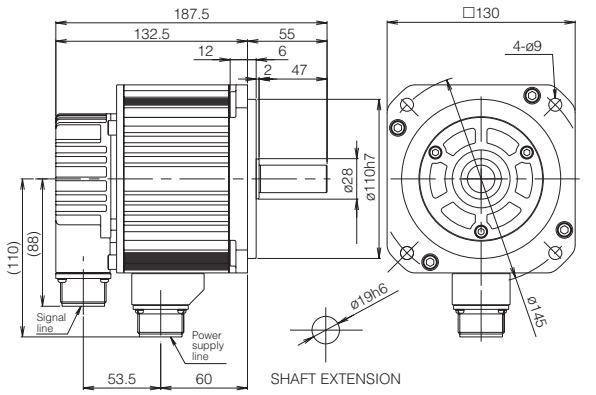
GYG Motor [2000r/min]

● **GYG501C5-□ B2** (Unit: mm)



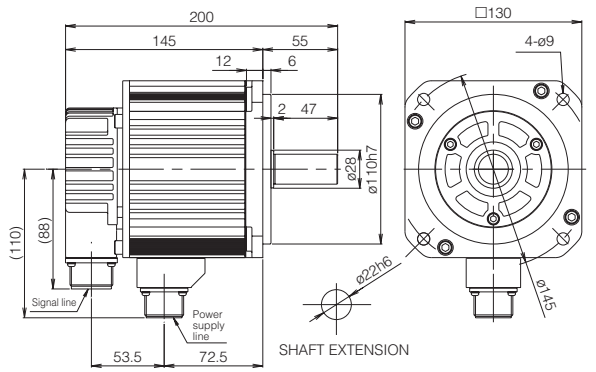
[Mass: 5.3kg]

● **GYG751C5-□ B2** (Unit: mm)



[Mass: 6.4kg]

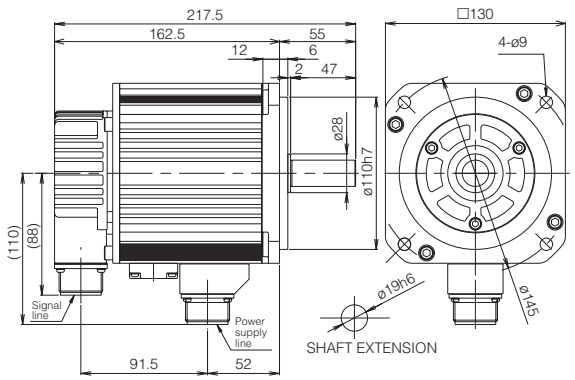
● **GYG102C5-□ B2** (Unit: mm)



[Mass: 7.5kg]

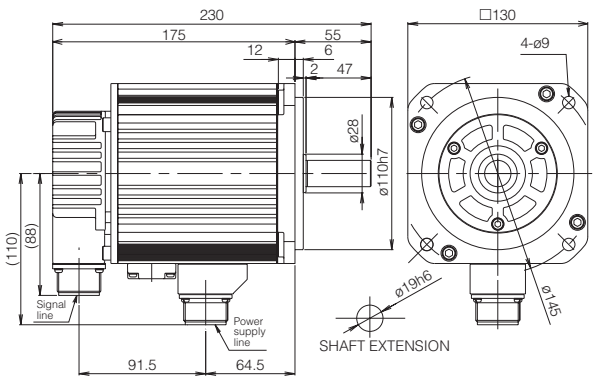
GYG Motor [2000r/min] (With a brake)

● **GYG501C5-□ B2-B** (Unit: mm)



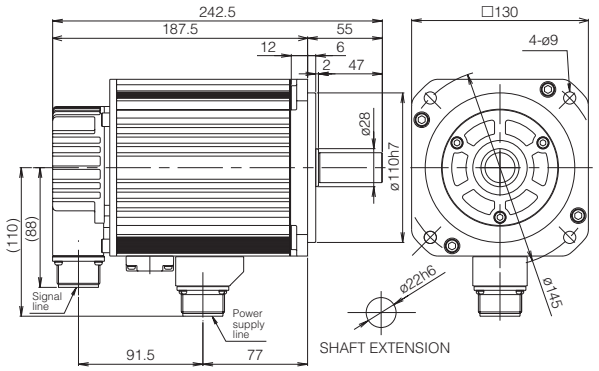
[Mass: 7.5kg]

● **GYG751C5-□ B2-B** (Unit: mm)



[Mass: 8.6kg]

● **GYG102C5-□ B2-B** (Unit: mm)

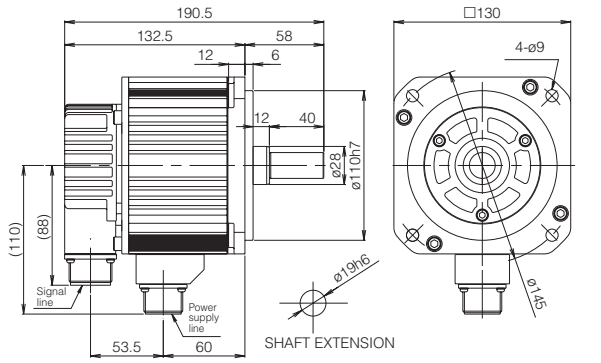


[Mass: 9.7kg]

External Dimensions

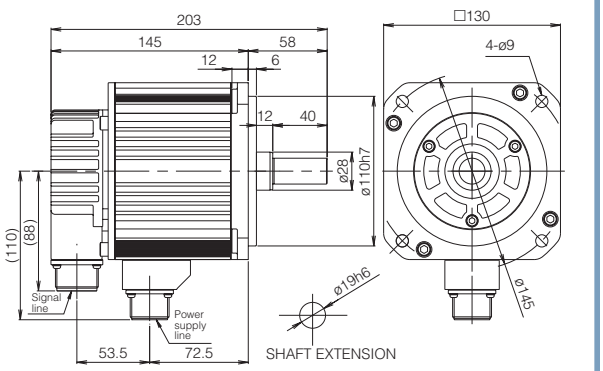
GYG Motor [1500r/min]

● **GYG501B5-□ B2** (Unit: mm)



[Mass: 6.4kg]

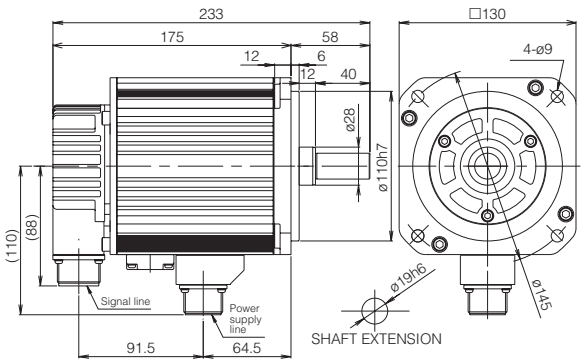
● **GYG851B5-□ B2** (Unit: mm)



[Mass: 7.5kg]

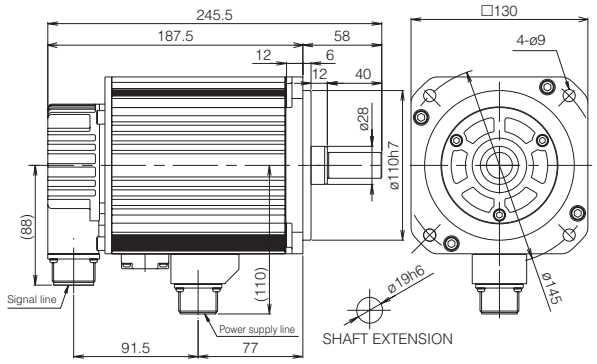
GYG Motor [1500r/min] (With a brake)

● **GYG501B5-□ B2-B** (Unit: mm)



[Mass: 8.6kg]

● **GYG851B5-□ B2-B** (Unit: mm)



[Mass: 9.7kg]

Model List

Servo amplifier

Specifications						Type
Model	Control mode	Command interface	Input power supply	Applicable motor	Applicable motor output	
VV type	Position, speed and torque control	General-purpose interface (pulse or analog voltage)	Single-phase or 3-phase 200 to 240V	GYS, GYC motor 3000r/min	0.05kW	RYT500D5-VV2
					0.1kW	RYT101D5-VV2
					0.2kW	RYT201D5-VV2
					0.4kW	RYT401D5-VV2
					0.75kW	RYT751D5-VV2
			3-phase 200 to 240V		1.0kW	RYT102D5-VV2
					1.5kW	RYT152D5-VV2
			Single-phase or 3-phase 200 to 240V	GYG motor 2000r/min	0.5kW	RYT501C5-VV2
					0.75kW	RYT751C5-VV2
			3-phase 200 to 240V		1.0kW	RYT102C5-VV2
			Single-phase or 3-phase 200 to 240V	GYG motor 1500r/min	0.5kW	RYT501B5-VV2
			3-phase 200 to 240V		0.85kW	RYT851B5-VV2
VS type	Position, speed and torque control	High speed serial bus (SX bus)	Single-phase or 3-phase 200 to 240V	GYS, GYC motor 3000r/min	0.05kW	RYT500D5-VS2
					0.1kW	RYT101D5-VS2
					0.2kW	RYT201D5-VS2
					0.4kW	RYT401D5-VS2
					0.75kW	RYT751D5-VS2
			3-phase 200 to 240V		1.0kW	RYT102D5-VS2
					1.5kW	RYT152D5-VS2
			Single-phase or 3-phase 200 to 240V	GYG motor 2000r/min	0.5kW	RYT501C5-VS2
					0.75kW	RYT751C5-VS2
			3-phase 200 to 240V		1.0kW	RYT102C5-VS2
			Single-phase or 3-phase 200 to 240V	GYG motor 1500r/min	0.5kW	RYT501B5-VS2
			3-phase 200 to 240V		0.85kW	RYT851B5-VS2
LS type	Position control (With built-in linear positioning function)	High speed serial bus (SX bus)	Single-phase or 3-phase 200 to 240V	GYS, GYC motor 3000r/min	0.05kW	RYT500D5-LS2
					0.1kW	RYT101D5-LS2
					0.2kW	RYT201D5-LS2
					0.4kW	RYT401D5-LS2
					0.75kW	RYT751D5-LS2
			3-phase 200 to 240V		1.0kW	RYT102D5-LS2
					1.5kW	RYT152D5-LS2
			Single-phase or 3-phase 200 to 240V	GYG motor 2000r/min	0.5kW	RYT501C5-LS2
					0.75kW	RYT751C5-LS2
			3-phase 200 to 240V		1.0kW	RYT102C5-LS2
			Single-phase or 3-phase 200 to 240V	GYG motor 1500r/min	0.5kW	RYT501B5-LS2
			3-phase 200 to 240V		0.85kW	RYT851B5-LS2

Model List

Servomotor

Specifications						Type
Model	Rated speed	Oil seal/shaft	Encoder	Brake	Rated output	
GYS motor (ultra low inertia)	3000r/min	Without an oil seal and a key (*1)	18-bit ABS/INC	Without a brake	0.05kW	GYS500D5-HB2
					0.1kW	GYS101D5-HB2
					0.2kW	GYS201D5-HB2
					0.4kW	GYS401D5-HB2
					0.75kW	GYS751D5-HB2
				With a brake	0.05kW	GYS500D5-HB2-B
					0.1kW	GYS101D5-HB2-B
					0.2kW	GYS201D5-HB2-B
					0.4kW	GYS401D5-HB2-B
					0.75kW	GYS751D5-HB2-B
			20-bit INC	Without a brake	0.05kW	GYS500D5-RB2
					0.1kW	GYS101D5-RB2
					0.2kW	GYS201D5-RB2
					0.4kW	GYS401D5-RB2
					0.75kW	GYS751D5-RB2
				With a brake	0.05kW	GYS500D5-RB2-B
					0.1kW	GYS101D5-RB2-B
					0.2kW	GYS201D5-RB2-B
					0.4kW	GYS401D5-RB2-B
					0.75kW	GYS751D5-RB2-B
GYC motor (low inertia)	3000r/min	Without an oil seal and a key (*1)	18-bit ABS/INC	Without a brake	0.1kW	GYC101D5-HB2
					0.2kW	GYC201D5-HB2
					0.4kW	GYC401D5-HB2
					0.75kW	GYC751D5-HB2
					1.0kW	GYC102D5-HB2
					1.5kW	GYC152D5-HB2
				With a brake	0.1kW	GYC101D5-HB2-B
					0.2kW	GYC201D5-HB2-B
					0.4kW	GYC401D5-HB2-B
					0.75kW	GYC751D5-HB2-B
					1.0kW	GYC102D5-HB2-B
					1.5kW	GYC152D5-HB2-B
			20-bit INC	Without a brake	0.1kW	GYC101D5-RB2
					0.2kW	GYC201D5-RB2
					0.4kW	GYC401D5-RB2
					0.75kW	GYC751D5-RB2
					1.0kW	GYC102D5-RB2
					1.5kW	GYC152D5-RB2
				With a brake	0.1kW	GYC101D5-RB2-B
					0.2kW	GYC201D5-RB2-B
					0.4kW	GYC401D5-RB2-B
					0.75kW	GYC751D5-RB2-B
					1.0kW	GYC102D5-RB2-B
					1.5kW	GYC152D5-RB2-B

*1: The other specifications are handled as a made-to-order item.

Model List

Servomotor

Specifications						Type
Model	Rated speed	Oil seal/shaft	Encoder	Brake	Rated output	
GYG motor (medium inertia)	2000r/min	Without an oil seal and a key (*1)	18-bit ABS/INC	Without a brake	0.5kW	GYG501C5-HB2
					0.75kW	GYG751C5-HB2
					1.0kW	GYG102C5-HB2
				With a brake	0.5kW	GYG501C5-HB2-B
					0.75kW	GYG751C5-HB2-B
					1.0kW	GYG102C5-HB2-B
			20-bit INC	Without a brake	0.5kW	GYG501C5-RB2
					0.75kW	GYG751C5-RB2
					1.0kW	GYG102C5-RB2
				With a brake	0.5kW	GYG501C5-RB2-B
					0.75kW	GYG751C5-RB2-B
					1.0kW	GYG102C5-RB2-B
GYG motor (medium inertia)	1500r/min	Without an oil seal and a key (*1)	18-bit ABS/INC	Without a brake	0.5kW	GYG501B5-HB2
					0.85kW	GYG851B5-HB2
				With a brake	0.5kW	GYG501B5-HB2-B
					0.85kW	GYG851B5-HB2-B
			20-bit INC	Without a brake	0.5kW	GYG501B5-RB2
					0.85kW	GYG851B5-RB2
				With a brake	0.5kW	GYG501B5-RB2-B
					0.85kW	GYG851B5-RB2-B

*1: The other specifications are handled as a made-to-order item.

Model List

Option

■Connector and cable

Name			Specification		Type
For main circuit of amplifier	Power supply connector (for amplifier control power and main power supply)		0.05 to 0.75kW	1 set	WSK-S05P-E
	DC circuit connector (wiring of external regenerative resistor, DC reactor, DC link circuit) *1		0.05 to 0.75kW	1 set	WSK-R06P-E
	Motor power connector (wiring of main motor power)		0.05 to 0.75kW	1 set	WSK-M03P-E
For sequence I/O (between host and amplifier)	Sequence I/O cable		0.05 to 0.75kW	3m (bare wires on one side)	WSC-D36P03
	Sequence I/O connector kit *4		Amplifier side	1 set	WSK-D36P
For encoder (between amplifier and motor)	Encoder cable		3000r/min for 0.05 to 0.75kW	2m (connector at both ends)	WSC-P06P02-E
				5m (connector at both ends)	WSC-P06P05-E
				10m (connector at both ends)	WSC-P06P10-E
				20m (connector at both ends)	WSC-P06P20-E
			3000r/min for 1.0 to 1.5kW	5m (connector at both ends)	WSC-P06P05-C
			2000r/min for 0.5 to 1.0kW	10m (connector at both ends)	WSC-P06P10-C
			1500r/min for 0.5 to 0.85kW	20m (connector at both ends)	WSC-P06P20-C
	Encoder connector kit *4		Amplifier side : All capacities	1 set	WSK-P06P-M
			Motor side : 0.05 to 0.75kW	1 set	WSK-P09P-D
			Motor side : 0.5 to 1.5kW	1 set	WSK-P06P-C
For motor power (between amplifier and motor)	Motor power cable	For main motor power *2	0.05 to 0.75kW	2m (bare wires on one side)	WSC-M04P02-E
				5m (bare wires on one side)	WSC-M04P05-E
				10m (bare wires on one side)	WSC-M04P10-E
				20m (bare wires on one side)	WSC-M04P20-E
		For brake power *3	0.05 to 0.75kW	2m (bare wires on one side)	WSC-M02P02-E
				5m (bare wires on one side)	WSC-M02P05-E
				10m (bare wires on one side)	WSC-M02P10-E
				20m (bare wires on one side)	WSC-M02P20-E
	Motor power connector kit	For main motor power *4	Motor side : 0.05 to 0.75kW	1 set	WSK-M04P-E
		For brake power *4	Motor side : 0.05 to 0.75kW	1 set	WSK-M02P-E
		For main motor power	Motor side : GYG 0.5 to 1.0kW	1 set	WSK-M04P-CA
			Motor side : GYC 1.0 to 1.5kW	1 set	WSK-M04P-CB
		For main motor power + brake power	Motor side : GYG 0.5 to 1.0kW	1 set	WSK-M06P-CA
			Motor side : GYC 1.0 to 1.5kW	1 set	WSK-M06P-CB
For SX bus	SX bus cable		For VS and LS type servo amplifiers	0.3m (connector at both ends)	NP1C-P3
				0.6m (connector at both ends)	NP1C-P6
				0.8m (connector at both ends)	NP1C-P8
				2m (connector at both ends)	NP1C-02
				5m (connector at both ends)	NP1C-05
				10m (connector at both ends)	NP1C-10
				15m (connector at both ends)	NP1C-15
				25m (connector at both ends)	NP1C-25

*1: One connector is included in the accessory of the main body of the servo amplifier.
*2: Use this cable with motor power connector (on amplifier side) WSK-M03P-E.
*3: Use this cable as a brake cable of the motor equipped with a brake.
*4: Use this connector when the customer fabricates a cable at arbitrary length.

■Common options

Specification				Type
ABS backup battery	Set of battery and case (*With case)		1 set	WSB-SC
	Battery (*Discrete replacement battery)		1 piece	WSB-S
External regenerative resistor	3000r/min for 0.05 to 0.4kW			WSR-401
	3000r/min for 0.75kW, 2000r/min for 0.5 to 1.0kW, 1500r/min for 0.5 to 0.85kW,			WSR-152
For PC loader connection	RS-232C - RS-485 conversion adaptor	For connection of RS-485 port of VV type servo amplifier *1	—	NW0H-CNV
	Cable		2m (connector at both ends)	WSC-PCL

*1: Prepare a marketed USB cable (A-B type) for the USB port.

Service Network

Fuji FA Service Centers

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[Service Area: Far East Asia]
5-7, Nihonbashi
Odemma-cho, Chuo-ku, Tokyo, 103-0011, Japan
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● USA Service Center
[Service Area: USA, Canada, Central & South America]
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4825 N. Scott St. Suite 210, Schiller Park, IL 60176
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● EC Service Center
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Oftenbach/ Main Germany
Phone: (69)669029-0

● South East Asia & Oceania Service Center
[Service Area: SE & S Asia, Oceania]
171 Chin Swee Road, #12-01,
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5F, Liming Bldg., No.144,
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Product Warranty

To all our customers who purchase Fuji Electric FA Components & Systems' products:

Please take the following items into consideration when placing your order.

When requesting an estimate and placing your orders for the products included in these materials, please be aware that any items such as specifications which are not specifically mentioned in the contract, catalog, specifications or other materials will be as mentioned below.
In addition, the products included in these materials are limited in the use they are put to and the place where they can be used, etc., and may require periodic inspection. Please confirm these points with your sales representative or directly with this company.
Furthermore, regarding purchased products and delivered products, we request that you take adequate consideration of the necessity of rapid receiving inspections and of product management and maintenance even before receiving your products.

1. Free of Charge Warranty Period and Warranty Range

1-1 Free of charge warranty period

(1) The product warranty period is "1 year from the date of purchase" or 24 months from the manufacturing date imprinted on the name place, whichever date is earlier.
(2) However, in cases where the use environment, conditions of use, use frequency and times used, etc., have an effect on product life, this warranty period may not apply.
(3) Furthermore, the warranty period for parts restored by Fuji Electric's Service Department is "6 months from the date that repairs are completed."

1-2 Warranty range

(1) In the event that breakdown occurs during the product's warranty period which is the responsibility of Fuji Electric, Fuji Electric will replace or repair the part of the product that has broken down free of charge at the place where the product was purchased or where it was delivered. However, if the following cases are applicable, the terms of this warranty may not apply.

1) The breakdown was caused by inappropriate conditions, environment, handling or use methods, etc. which are not specified in the catalog, operation manual, specifications or other relevant documents.
2) The breakdown was caused by the product other than the purchased or delivered Fuji's product.
3) The breakdown was caused by the product other than Fuji's product, such as the customer's equipment or software design, etc.
4) Concerning the Fuji's programmable products, the breakdown was caused by a program other than a program supplied by this company, or the results from using such a program.
5) The breakdown was caused by modifications or repairs affected by a party other than Fuji Electric.
6) The breakdown was caused by improper maintenance or replacement using consumables, etc. specified in the operation manual or catalog, etc.
7) The breakdown was caused by a chemical or technical problem that was not foreseen when making practical application of the product at the time it was purchased or delivered.
8) The product was not used in the manner the product was originally intended to be used.
9) The breakdown was caused by a reason which is not this company's responsibility, such as lightning or other disaster.

(2) Furthermore, the warranty specified herein shall be limited to the purchased or delivered product alone.
(3) The upper limit for the warranty range shall be as specified in item (1) above and any damages (damage to or loss of machinery or equipment, or lost profits from the same, etc.) consequent to or resulting from breakdown of the purchased or delivered product shall be excluded from coverage by this warranty.

1-3. Trouble diagnosis

As a rule, the customer is requested to carry out a preliminary trouble diagnosis. However, at the customer's request, this company or its service network can perform the trouble diagnosis on a chargeable basis. In this case, the customer is asked to assume the burden for charges levied in accordance with this company's fee schedule.

2. Exclusion of Liability for Loss of Opportunity, etc.

Regardless of whether a breakdown occurs during or after the free of charge warranty period, this company shall not be liable for any loss of opportunity, loss of profits, or damages arising from special circumstances, secondary damages, accident compensation to another company, or damages to products other than this company's products, whether foreseen or not by this company, which this company is not be responsible for causing.

3. Repair Period after Production Stop, Spare Parts Supply Period (Holding Period)

Concerning models (products) which have gone out of production, this company will perform repairs for a period of 7 years after production stop, counting from the month and year when the production stop occurs. In addition, we will continue to supply the spare parts required for repairs for a period of 7 years, counting from the month and year when the production stop occurs. However, if it is estimated that the life cycle of certain electronic and other parts is short and it will be difficult to procure or produce those parts, there may be cases where it is difficult to provide repairs or supply spare parts even within this 7-year period. For details, please confirm at our company's business office or our service office.

4. Transfer Rights

In the case of standard products which do not include settings or adjustments in an application program, the products shall be transported to and transferred to the customer and this company shall not be responsible for local adjustments or trial operation.

5. Service Contents

The cost of purchased and delivered products does not include the cost of dispatching engineers or service costs. Depending on the request, these can be discussed separately.

6. Applicable Scope of Service

Above contents shall be assumed to apply to transactions and use of the country where you purchased the products. Consult the local supplier or Fuji for the detail separately.

Reference Material

Motion controller
MICREX-SX Series SPH

Various CPUs matching your purposes are included in the line of products.
- Module type (Up to 64 axes control)
- PCI bus compatible board type (Up to 32 axes control)
- Selection of program language best for the control (LD, ST or FB language)

Catalog (LEH982)

Programmable operation display
UG Series POD

Various products ranging from 5.7" (QVGA) to 15" (XGA) types are included in the product line.
Full color (32,768 colors) realizes colorful and beautiful screen expression.

Catalog (LEH854)

⚠ SAFETY PRECAUTIONS

1 This catalog is intended for use in selecting required servo systems. Before actually using these products, carefully read their instruction manuals and understand their correct usage.
2. Products described in this catalog are neither designed nor manufactured for combined use with a system or equipment that will affect human lives.
   If you are considering using these products for special purposes, such as atomic energy control, aerospace, medical application, or traffic control, please consult our sales office.
3. If you use our product with equipment that is expected to cause serious injury or damage to your property in case of failure, be sure to take appropriate safety measures for the equipment.

The Inverter Value Engineering Center (Suzuka Area) has acquired environment management system ISO14001 and quality management system ISO9001 certifications.

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Printed on 100% recycled paper

Information in this catalog is subject to change without notice.

Printed in Japan 2007-11 (K07a/K07a) CM